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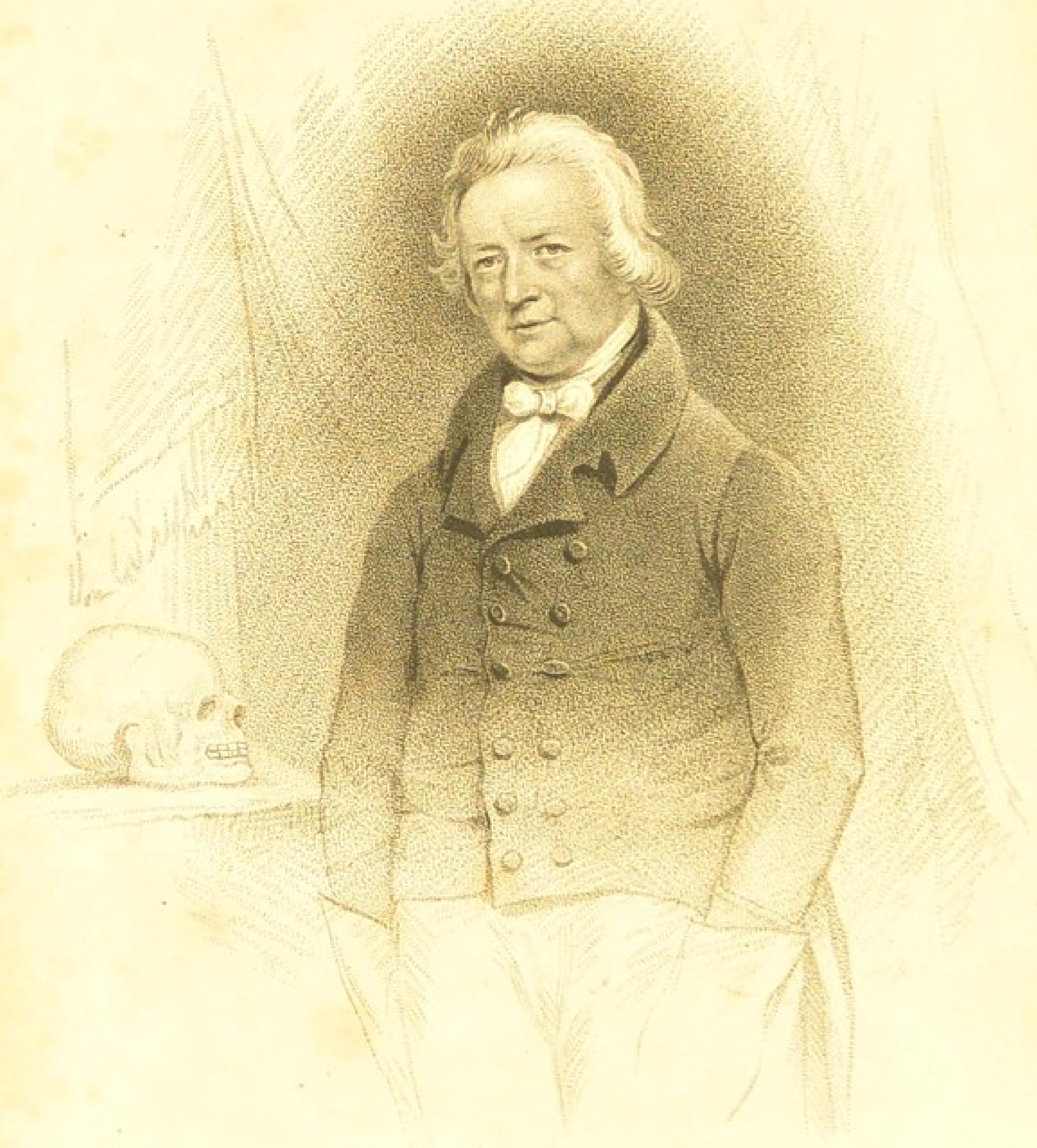

JOHN ABERNETHY, F.R.S.

From an original Drawing in the possession of Richard Cremer Esq.re of Chelmsford.

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A

DICTIONARY OF DIET;

BEING

A PRACTICAL TREATISE

ON

ALL PABULARY AND NUTRITIVE SUBSTANCES,

SOLID AND FLUID,

WITH THEIR COMPOUNDS,

USED AS FOOD;

INCLUDING THE OBSERVATIONS OF

EMINENT PHILOSOPHERS, PHYSICIANS, GASTRONOMERS, AND OTHER INDUSTRIOUS INQUIRERS INTO THE TRUE SCIENCE OF EATING, DRINKING, AND PRESERVING HEALTH,

THROUGH THE MEDIUM OF WELL REGULATED AND EASILY DIGESTIBLE FOOD, FOUNDED ON THE KNOWN SPECIFIC PROPERTIES OF ALL KINDS OF HUMAN ALIMENT;

WITH

THE MEANS OF PREVENTION, AND CURE, OF THE DISEASES RESULTING FROM A DERANGED CONDITION OF THE ORGANS OF DIGESTION, ETC. ETC.

BY J. S. FORSYTH, SURGEON,

AUTHOR OF THE "LONDON MEDICAL AND SURGICAL DICTIONARY;" "TREATISE ON DIET AND REGIMEN;" "NEW DOMESTIC MEDICAL MANUAL," ETC. ETC.

"Health depends chiefly on the choice of food; and he who would treat skilfully the subject of health, must consider the nature of man, the nature of aliments, and the constitution of the person who takes them."—HIPPOCRATES.

"We should beware of such food as may tempt us to eat when we are not hungry; and of such liquors as may entice us to drink when we are not thirsty."
SOCRATES.

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PREFACE.

As the first and most important consideration towards the prevention of disease and the conservation of the public health, is a plentiful supply of wholesome food, a competent knowledge of the various resources supplied by nature and art for this purpose is sufficiently apparent to require little to be said on the subject; it was wisely and learnedly advanced by Galen, who has quoted the great father of Physic, that "*health depends chiefly on the choice of food*"—and "*that he who would skilfully treat the subject of health, must consider the nature of man, the nature of aliments, and the constitution of the person that takes them.*"

It is asserted, and we are not prepared to deny it, that the whole constitution of the body may be changed by diet; and Galen again informs us, that in the right ordering of our health, we should take those kinds of food which appear to be best adapted "to our own particular bodies, age, temperature, distemperature and complexions." Hence, to be enabled to do so much for ourselves, it implies not only an acquaintance with the various substances, animal and vegetable, solid and fluid, their state of perfection, and mode of preparation; but, at the same time, some rational acquaintance also with the functions and agents by which the organs to which they are submitted, are influenced by their use, as well as the condition in which the latter are to receive them.

Under these points of consideration may be included the apparatus of digestion; the processes of nutrition, assimilation, and renovation; the economy of the senses, and the regulation of those internal sensations by which our constitutions may be either physically affected or morbidly deranged. It is this knowledge of the animal economy that directs us equally in the preservation of health as in the cure of diseases; since we thereby supply what is salutary for our subsistence, relieve what is oppressed in the system, open what is obstructed, strengthen what has become weak; and thus restore to healthy action the wheels of life that had been previously clogged by disease. With these objects in view it became our province minutely to describe the nutritive qualities and other conducive properties of all known alimentary substances, solid or fluid, animal or vegetable, in common use; noting distinctly such as have less claim than others to these pretensions; at the same time, to lay down such rules and directions for the regulation of individual constitutions as each species might appear best to agree with, founded on the experience of both ancient and modern writers. Suffice it further to say that, disclaiming all and every connexion with theories or preconceived opinions, the "DICTIONARY OF DIET," so called, is deduced from, and based upon, the research and practical experience, and confirmed by the hitherto unshaken opinions, of those high and standard authorities which have appeared in succession for the last 2000 years; at the same time that, independently, it presents a new typographical feature in the MATERIA ALIMENTARIA, considerably improved, which hitherto has not been attempted.

J. S. F.

INTRODUCTION.

Among the variety of active and useful pursuits which have the improvement of the physical and moral condition of man in view, stands pre-eminently distinguished the rational means of preserving health, preventing disease, and, consequently, of prolonging human life. Natural and experimental philosophy, chemistry, anatomy and physiology, have respectively lent their aid in resolving the grand problem by which man is embodied with, and after a certain definite period, longer or shorter, he is separated from this world of matter, to enjoy a more refined existence in the world of mind. It is the same knowledge that has contributed the principal share towards developing the perishableness of our present structure and its mode of existence, as at variance with perpetual health and long life, without the interference of those auxiliaries which nature has so amply provided us with, and which are so wisely and profusely distributed over the face of the earth, to promote the ends of Providence. Since, then, it is admitted that the preservation of health, and the extension of human life to the longest possible period, depend on diet, assisted by other auxiliary means; and the cure of diseases on medicine and regimen; the utility of a knowledge of these respective agents to meet such desirable ends, must be evident to every one capable of reflection. Medicine, considered as a science resting upon practical rules of experience, being, in a great measure, founded upon natural philosophy and chemistry, and the elements of our food being subject to the same laws, it follows, that with the daily progress of the one, the other must unquestionably partake of its improvements, and be continually and reciprocally receiving accessions, which cannot fail to lead to their further advancement. Nature, nevertheless, must still be held in view; she is our pilot and sheet-anchor, and will ever remain so with greater certainty, in the ratio of our acquaintance with her operations. Hence only, a source of many extensive benefits will be laid open to us; and through this labyrinth, however intricate at first sight it may appear, we shall approach our original destination—namely, that of enjoying health, and living to a good old age. Thus, aided by the knowledge and experience of the most distinguished philosophers, ancient and modern, and the practice and observations of the wisest and oldest physicians, from Hippocrates the father of physic, down to the present enlightened age, may we still not indulge in the flattering hope of yet discovering more of nature's hidden treasures, and of penetrating still farther into her wonderful and mysterious recesses?

When for a moment we reflect on the natural strength of the human frame, without regard to external agents, one is almost induced to conclude that it was intended for a much longer duration than it really is; the firm bony basis on which the muscles act, and transport us from place to place, by which we can protect ourselves from extreme force; the curious system of vessels, so intricately, yet harmoniously interwoven, for giving and depositing nourishment, and supplying that waste which the continued actions of the parts occasion—the elimination of what is useless, by the excretory channels—the power of resisting heat and cold to a certain degree—the wonderful ingenuity adapted for defence—the organs of sense and sensation, to protect our lives by immediately informing us of danger, either externally or internally: still, notwithstanding all this compactness of structure, in which the wisdom of the Divine architect is so pre-eminently visible, in its most minute parts, seldom two or three years pass over without some derangement. On every hand the seeds of disease are met with; the very things on which our existence seems to depend, appear to undermine our health, by being altered or destroyed in their properties; for instance, the air we breathe, changes of temperature, food, exercise—all tend to induce tone, or its opposite, atony or want of tone, in the system.

Nature has attached Pleasure to Want; but one of those guides leads, for the most part, farther than the other. Reason was given to man, to make him social; but when once he has yielded to the seductive influence of pleasure, he is not very liable to be correct in the measure of his reason—he has then quitted the "tree of life;" and this once done, he is no longer permitted to cull its fruits. The emblems of Egypt, where Moses had been brought up and instructed, and the fables of Greece, present us with the same origins, and always the most simple vegetable regimen, characteristic of the first ages of the world. It was, in fine, the produce of the earth, in its natural state, that supplied its inhabitants with both food and sauce. Moderate exercise, wholesome, odoriferous air, insured health and strength, which, with minds undistracted by ambition, furnished that appetite which, to the luxurious liver and debauchee, is so constantly refused.

When Adam lost his innocence, he lost also the benefit of the tree of life; but the same common food was continued after his transgression which he had used before it; yet this was strictly conformable with divine command, "and thou shalt eat of the herb of the field," (Gen. iii. 18). Happily, however, by his own intelligence, under the direction of Providence, he and his family soon became acquainted with husbandry, which supplied them with the necessaries of life, in a plain, wholesome, and comfortable manner. Hence the great longevity for which the earlier inhabitants of the world were so remarkable. It was not so with the first inhabitants of Greece, who, having abandoned the fertile country of Asia, and being destitute of the implements and support of husbandry, lived like the beasts of the field, on the spontaneous productions of the earth and the woods. This account we are furnished with from their own historians, who speak of their earliest ancestors, as if they had been the first generations of the world.

Diodorus Siculus writes,* that "the first inhabitants of the world ranged over the fields and woods in search of food like the beasts, eating every mild herb they could find, and such fruit as the trees produced of their own accord." Ælian (*Bibl. Hist. lib.* 3, *cap.* 39), affirms, that "the diet of the primeval race differed according to the different products of their respective countries: the Arcadians having lived on acorns, the Argives on pears, the Athenians on figs." Plutarch informs us, that the "first Argives, led by Inachus, searched the woods in quest of wild peas for support." Among the Roman writers also, Pliny, in his Natural History (lib. 16. in princip.) laments the savage condition of the first ages, "which subsisted on acorns." And Galen seems to think all these accounts true, for he assures us (De alimenti facult. lib. 2. cap. 28), that "acorns afford as good nourishment as many sorts of grain,—that in ancient times men lived on acorns only; and that the Arcadians continued to eat them, long after the rest of Greece had made use of bread corn." This account Galen learned from Herodotus, (Clio. cap. 66), who relates, that "upon the death of Lycurgus, the Lacedemonians meditating the conquest of Arcadia, were told by the Oracle that there were many brave acorn-eaters in that country, who would repel them in case they did not desist from carrying their arms thither; as it afterwards happened." The poets are of the same opinions as the historians, concerning the food of the primitive inhabitants of the earth. Hesiod sings †—

> The fields, as yet untill'd, their fruits afford,
> And fill a sumptuous and unenvied board.—Cooke.

And Ovid, among many others to the same purpose, in the first book of his Metamorphoses—

> Content with food which nature freely bred,
> On wildings, and on strawberries they fed;
> Cornels and bramble-berries gave the rest,
> And falling acorns furnished out a feast.—Dryden.

Those ages, nevertheless, are by some philosophers and poets called the golden ages of the world; but this notion must have arisen either from the

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* The same author, in his life of Artaxerxes Longimanus, tells us that, much later than the time we speak of, this unwary prince led a great army against the Cadusians, a robust and warlike people, whose inhospitable country produced neither corn nor good fruit, so that the natives were forced to live on peas and apples, which grew wild and spontaneous.

† Oper. et dier. lib. i. line 17.

obscure tradition they had concerning Paradise, or from the supposed integrity of men's lives while they subsisted in common on what the woods and fields supplied, and while there was yet no property or private interest to raise disputes and animosities, and tempt them to acts of violence and fraud; for such a splendid appellation could not with any propriety be given as regards the comforts and conveniences of life, which have been enjoyed in a much higher degree by succeeding ages, instructed in the knowledge of arts and sciences. After this celebrated epoch, in which, whatever peace the mind might enjoy, the body was but indifferently provided for, and man could just preserve his existence from day to day; the first approach towards a more mild and wholesome diet among the Greeks, and towards a fund of plenty for all seasons of the year, was made by tilling the ground and sowing corn; an invention which, by Hesiod, is ascribed to Ceres (Oper. et dier. lib. 2, lin. 83), by her admonishing the husbandman to pray to Jupiter and to *her*, before he enters upon his labour, in the season of tillage :

"Pray to celestial Jove, and Ceres chaste."

The Roman poets do her the same honour more expressly :—

Prima Ceres unco glebam dimovit aratro,
Prima dedit fruges, alimentaque mitia terris.—Ovid.

Pliny attributes not only the invention of the plough, but of grinding corn also, and making of bread, to the same goddess; and adds, that divine honours were paid to her in Attica, Italy, and Sicily, on this account. And indeed, if she had any share in such a noble and useful invention, she merited all the reasonable encomia which they could bestow upon her. So grateful were the ancient inhabitants of Italy to their benefactors, that they conferred immortal honours even on Stercutius, the son of Faunus, for his invention of improving land, by spreading dung over it. As regards the other great branch of husbandry, or the management and use of flocks and herds, it is probable that this was recovered in Greece about the same time with agriculture; and that the Arcadian shepherds might teach their skill in pasturage to the other provinces, and from them, in return, learn how to cultivate the land.

The decays of nature, in the expiring periods of life, were the only infirmities to which men were then liable; and though their limbs sometimes failed to perform their offices, their health and appetite continued with them till life was no more. In this rude, but natural state, the food of mankind is said to have continued upwards of two thousand years, during which period the cook and the physician were equally unknown. It is not easy to say at what period man exchanged vegetable for animal diet; but certain it is, that he no sooner began to feed on flesh, fowl, and fish, than seasonings of some kind became requisite, not only to render such food more pleasing and palatable, but also to help digestion, and prevent putrefaction. Of these seasonings, salt was probably the first discovered; though some are inclined to think, that savoury roots and herbs were first in use; spices, however, as ginger, cinnamon, pepper, cloves, and nutmegs, by degrees came into use, and the whole art of cookery gradually improved till it reached its present climax of perfection. Eating of animal food was evidently adopted as necessary to guard against famine, the consequence of the scarcity and bad condition of vegetable productions. We find, therefore, that in process of time, and to aid their mutual wants, as well as to protect the weak against the strong, the industrious from the indolent—men, by general consent, began to portion out to each other a certain measure of land, to produce them their supply of vegetables. Reason soon after suggested the expedient of domesticating certain animals, equally to assist them in their labours and to supply them with food. Hogs, it is said, were the first animals of the domestic kind that appeared on their tables, as then they held it to be ungrateful to devour the beasts that assisted them in their labours.

When men began to make free with domestic animals, they only roasted them. Boiling was a refinement in cookery to which, for some ages, they were strangers; and fish, living in an element to which men were unaccustomed, were not eaten, till they became somewhat more civilised. When permission was given man to eat animal food, God said: "Every living thing that moveth shall be meat for you; even as the green herb, have I given you all things." (Gen. i, 28). This opinion, however, has been strenuously controverted. Some learned men assert, that Adam was permitted to eat the flesh of animals, or, at least, that his posterity did eat it, with or without permission, long before the Flood. Others, on the contrary, maintain that Noah was the first who had permission to eat, or did eat, any animal food. The former, in support of their opinion, assert that the dominion (Gen. i. 28) given to Adam over the brute creation, implies a permission to kill animals for food, and that the skins (Gen. iii. 21) of which God made coats for the first couple, shew that a proper use was taken of such permission: that no good reason can be assigned why the Almighty should give a more unlimited authority over the brutes after the Deluge than before it; and since animal food affords a more strengthening nourishment than the vegetable products, we ought to conclude, that it was allowed from the beginning: that the clean beasts, being taken in by sevens, and the unclean only by couples, the male and his female, it may be presumed that the surplus of the clean was intended for provision to Noah's family, during their abode in the ark: that the appetites of the Antediluvians must have been pampered with flesh meats, and their passions inflamed with strong liquors, to incite them to commit such great wickedness, as provoked the Creator to destroy the whole species, except one family, since bread, milk, and water could never stimulate them to that excess of violence. And this argument is further confirmed by observing, that carnivorous animals, as lions and tigers, are more fierce than those that live on herbage; and, lastly, that as the sacrificing of animals, which was a most early institution, might have given occasion, first to the tasting, and afterwards to the eating of dressed flesh, which, to a hungry stomach especially, sends forth no unsavoury odour, we can easily account for the commencement of this food; and as most of the Antediluvians were under no restraint of conscience, to prevent their using that kind of food, supposing it had not been expressly permitted, there is little reason to doubt that flesh became a part of common aliment long before the Flood. On the other hand, it is denied that the dominion given to Adam over the brutes, implied a power to kill them. It is cruel, say they, to infer such a power from an ambiguous expression. Isaac gave Jacob dominion over his brethren (Gen. xxvii. 40); the Philistines had dominion over Israel (Judg. xiv. 4), which did not imply a right to destroy them. The dominion of man over the beasts of the field appears to have consisted in the use which he might make of their milk, wool, honey, feathers, &c. and of their assistance and service for carriage, agriculture, and defence. It does not follow, because animal food affords a more invigorating nourishment, that therefore it must have been allowed from the beginning; for we find, say they, that though blood* is as nourishing as flesh, yet it was prohibited, not only to Noah (Gen. ix. 3, 4), and the Jews (Lev. xvii. 10, &c.), but also to the stranger (Deut. xii. 23, 24), under pain of death; and since blood is prohibited in every place where flesh is permitted, it follows that the prohibition and permission must have been promulgated at the same time, that is, after the Flood.

As regards the argument, that the sons of violence, before the Deluge, must have been stimulated by high food and strong drink, to perpetrate so much wickedness; the opposite side maintains, that men's morals are corrupted, rather through want of discipline, than by the nature of their food; and that men of healthy and robust constitutions, as the Antediluvians certainly were, under no restraint from laws, human or divine, are the most violent and mischievous savages of nature, let their aliment be what it will. That, in fact, the nations of the earth most addicted to lewdness, rapine, and murder at this day, are frugal in their diet, and forbidden by their religion to use wine, particularly the pirates of Barbary and the wild Arabs. And even in Britain and Ireland, that those who live on bread, milk, cheese, cabbage, and potatoes, are perhaps no less disposed to rapine and violence

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* Galinarum ac Columbarum Sanguine nonnulli vescuntur, maximè altilium, qui suum Sanguine haudquaquam est inferior, neque voluptate, neque coctionis facultate.—*Galen, Class* 2. *De alimenti facultat. Lib.* 3, *cap.* 23. Homerus quoque caprarum sanguinem in cibo jucundum esse non ignoravit.—*Ibid, cap.* 18.

than such of the community as have good drink and animal food in abundance. Nor is a wild bull, that eats grass, less furious than a lion, that feeds on flesh, and do we not daily see some birds that live on grain, fight and tear each other with most astonishing ferocity. It is further urged, that as we have no genuine account of the primeval state of man, from any historian but Moses, who is supposed to be the first writer on diet, and since he informs us (Gen. i. 29, iii. 18), that vegetable food was expressly appointed for man before the Flood, in two different periods, and animal food immediately after it (Gen. ix. 3); we have no authority to assert the contrary, unless we can shew that we are better acquainted with the transactions of those times than the Jewish historian: and why should a direct explicit permission to eat animal food, after the Deluge, as he had done the "green herb" before it, be given to Noah, if the same permission had been given to Adam? Besides, the most eminent historians,* physicians,† and philosophers‡ of antiquity agree, that the first generations of men did not eat flesh. Lastly, in reference to the first who ventured to destroy animals for food, it is affirmed, that the attempt to tear and devour creatures so like himself, was the most savage and unnatural thought that ever entered the heart of man; and that nothing less than the express permission from the Deity could either induce or justify the first who made the cruel experiment, to take such a bold step, let his appetite be never so keen, or the odour of burnt offerings never so fragrant.

Another great improvement of man's food, was the invention of wine, which well deserves the encomium bestowed upon it by Plutarch (Præcept. de Sanitat. tuend.), of being the most noble of all liquors; the most palatable of medicines, and of all delicacies the most grateful to the stomach. Aretæus also, a physician of the first rank among the ancients, commends wine no less for the cures it performs. Noah, ‖ says Plutarch, began to be a husbandman, and he planted a vineyard, and he drank the wine, and was drunken. (Gen. ix. 20, 21. Year B.C. 2348). The good man being a stranger to the qualities of his new liquor, reason and humanity required

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* Moses, Sanchoniatho, Diodorus Siculus.

† Hippocrates and Galen.

‡ Phythagoras, Empedocles, Plato, (lib.vi,de Rep.)Porphyr. idem. See Porphyr. de republica, de usu animalium; also Diogen. Laert. Nat. Hist. lib. 21. c. 13.

‖ What the name was of that which we now call wine, in the primitive ages of the world, we have no means of ascertaining, though it is probable it was much the same word as is used to express it by Moses, in Genesis (chap. and ver. above annexed), from the Hebrew words, implying *to press out from.* The word *wine* is nearly similar in all languages, and it seems probable that all nations derived their name of that beverage from the world before the Flood, through Noah.

that he should try what effect it might have upon himself, before he recommended it to his family, though he had the misfortune for a while to be deprived of his reason by the experiment. Noah had, doubtless, tasted grapes before, and found them harmless, and it was impossible he should know, until taught by experience, that fermentation gives an inebriating quality to liquors, or would produce a spirit in the juice of the grape, which it did not contain before.

Not long after wine, it is probable that beer was discovered, for we are informed by Herodotus, that, in the corn provinces of Egypt, where no vines grew, the people drank a sort of wine made of barley. And this seems to be the strong drink* mentioned along with the wine, in many places of the Old Testament. In fine, the different improvements made with respect to the different sorts of aliments used by men at different periods of time, from the Creation to Moses, seem to have preceded nearly in the following manner:—Fruits, seeds, herbs, bread, milk, fish, flesh, wine, ale; to which may be added butter, honey, olive oil, eggs, and cheese. But as aliment came, in the process of time, to be improved to such a high degree, a thorough discussion of which might here occupy too much space, we need merely observe, that as regards cooking, boiling or stewing appears to have been very early adopted by the ancients. Roasting or broiling very soon succeeded; beyond which no improvements in the culinary art appear to have been made for several centuries after. The introduction of trade and commerce soon made us acquainted with the products of other countries; and delicious fruits, and the choicest aromatic spices, which were wafted to us from the remotest regions of the habitable globe, were soon sought after

* The invention of an intoxicating liquor from corn has been attributed to the Egyptian deities, Osiris and Isis, who, while on earth, were great benefactors to an industrious and intelligent people. However backward the modern Egyptians may be in agriculture, Osiris collected all information on the subject within his reach, and taught it to his people, who then practised it with effect: and in these labours he was effectually assisted by his wife, and sister Isis, the Ceres of the Romans. The opinion entertained by those of our own times, who have attempted to trace the history of fermented liquors, is, that the Egyptians, not having grapes, possessed no wine; and that, as their climate required the aid of such a stimulant, Osiris, one of their princes, invented the art of making wine from corn. There are certainly passages in the ancient writers which seem to countenance this opinion, if not positively to support it. The subject is several times alluded to by Diodorus Seculus. In the first book, he says, that wherever the wine was not found, Osiris taught the people to make a drink from barley; not much inferior to wine in point of fragrance and efficacy. In the same book, he says, drink, which they call *Zythum*, is made by the Egyptians from barley, not much exceeded by wine in smell and taste: in the fourth book he again alludes to the subject.

Cabinet Cyclopædia—Domestic Econ. vol. i. p. 13.

with fondness and avidity. Cookery, confectionery, pickling, preserving, and drysalting, soon became arts, which were as methodically studied as the more polite sciences.

These first inventions were quickly followed by more refined preparations, according as sensuality became awakened, or as want compelled to proportion the resistance of the aliments to the already weakened and diminished activity of the organs. It is thus that Hippocrates, with a learned and exact hand, points out to us, in his Treatise on primitive medicine, the history of the successive perfections with regard to food, and shews us man, instructed as much by pain as pleasure, *to choose, prepare*, and *metamorphose*, the substances which serve him for nourishment: thus discovering by his own experience, the first elements of health and medicine. For by admitting, with Moses, the hereditary weakness of the bodies of men by the abuse of enjoyments, it is conceived that a nourishment, salutary at first, becomes afterwards too gross for enervated organs: it is then that the sense of the evil finds out the measure and modifications of the regimen; consequently, says Hippocrates, "*you find neither measure, balance, nor calculation to which you can more safely apply, than to the very sensations which the body experiences.*" What becomes now of our modern system-mongers, and diet inventors? If these sensations had been sufficient for the establishment of dietetic rules, there had been no necessity for the interference of art. Since, on the authority just quoted, *where none are ignorant, and all instructed, either through custom or want, the title of artist can be applied to no one.* Nevertheless, the wants, errors, and infirmities of men increasing, and tradition growing insufficient to collect and hand them down, art has formed itself and become necessary. Hippocrates, in proof of his reality, quotes the example of the gymnastic physicians, who *every day*, he says, make fresh observations upon the meats and drinks which are capable of affording more strength and vigour to the body.

The study of diet, even before the time of Hippocrates, had been carried to a great extent; for Herodotus observes of the Egyptians, that having remarked that the greatest number of diseases proceeded from the abuse of food, they took care every month to consecrate three successive days to make themselves vomit, and cleanse themselves with clysters, to pursue and seize health, (Euterp. sect. 77. Edit. Glasgow). This custom of emetics was used among the Romans, rather as a means of favouring gluttony than to preserve health; and it appears in several passages of Hippocrates,* that during his time, the Greeks occasionally resorted to mild means, in order to

* Hippocrates, the great father of physic, says, "Health depends chiefly on the choice of food," and that "the physicians before his time were to be blamed, for not prescribing rules of diet;" and "that he who would skilfully treat the subject of aliment, must consider the nature of man, the nature of aliments, and the constitution of the person who takes them."

excite vomiting, and clear out the stomach.* But Herodotus, a judicious and observing man, after having noticed that the Egyptians were the most healthy people of Africa, attributes their advantage less to these customs than to the uniform temperature of the climate they inhabit, "where," he observes, "the seasons are not subject to any vicissitudes." Notwithstanding all this, and although the regimen of Pythagoras and the institutions of Lycurgus had preceded, by a great number of years, the age of Hippocrates and Plato; although Iccus, a physician of Tarentum, had some years before recommended the union of gymnastics with the most sober regimen, to preserve health; although he had acquired sufficient reputation as to have applied to him the powerful expression of *Iccus's meal,* in allusion to its simplicity; Plato, however, does not less, on this account, attribute to Herodotus the invention of medical gymnastics, and Hippocrates assigns to himself the honour of having determined with exactitude the proportions of regimen, either for a state of health or disease. This appears in his first and second books "of the regimen of men in health," and in that entitled "of regimen in acute diseases." In the latter, Hippocrates says, *that the ancients have written nothing on diet worthy of being mentioned, and they have passed over this important article in silence.* In the first book of diet, Hippocrates begins by exposing how much the labours of the ancients on this subject have left behind them untouched—and at the close of the preamble he says, "I will make known that which none of my predecessors even undertook to demonstrate." Hippocrates also lays claim to the merit of having determined the times and signs which precede deranged health, and the means of preventing the consequences by suitable and respective proportions of food and exercise.

The elegant Celsus, in the first book of his work, treats of the regimen of strong, healthy, and robust people; and afterwards lays down some excellent rules to people of a weak and infirm constitution; and lastly, those dictated by the seasons, or such as are useful under different circumstances of life. In the first chapter, two remarkable rules are laid down, which it would be well for those to whom they are addressed to study. His general rule is, that the healthy and well-formed man ought not to restrict himself to any invariable law—a very sage advice, and from which a proposition results worthy of remark, which some authors have rather unreasonably censured, from not having generally conceived the spirit in which it is formed:—"*Modo plus justo, modo non amplius assumere:*" that is, sometimes to exceed the just measure of necessity, sometimes to restrict ones-self to that measure. This is, in fact, the true meaning of the word *justo.* Sebigius has made no allusion to it, when he reproaches Celsus with being the apostle of gluttons and drunkards. He is certain that the strict and defined law of want, is not made for those who enjoy robust

* See *Art.* on TRAINING, p. 343, et seq.

health, but for those only who are under the necessity of keeping a strict watch over themselves: and Sanctorius has uttered nothing which Celsus himself has not said in the subsequent chapter, when he made the following reflection, (Sect. iii, Aphor. 42), 'Celsi sententia non omnibus tutta est;' that is, this sentence of Celsus is not safe for everybody. The precepts of Celsus are principally directed to regimen, and the choice of foods and drinks; the use of baths; the proportions and mutual relations of meals and labour; on dieting, emetics, and gymnastic exercises.

To other writers on diet, from Hippocrates to Galen, Xenocrates may be added. He lived in the reign of Tiberius; and was the author of a treatise on fish, included in the treatise of Photius; but which contains few things of any note. Dioscorides, who lived in the reign of the sanguinary Nero, inserted in his work, among the medicaments of which the principal part consists, different articles relative to food and condiments, and their properties. It is more particularly in the second and fifth books where these articles are to be met with; the general merit of which, at best, is rather of a slender texture. It is not among the writers on health that Cœlius Apicius must be ranked, although he has left behind him a collection of culinary *receipts* of his time. He lived in the reign of Trajan: but Pliny, the naturalist, who lived under Vespasian and Titus, left behind him a natural history of alimentary substances; with the properties attributed to, and the customs of the Romans at that period, which leaves curiosity little more to desire on these subjects. The charms of his style, the philosophical and profound reflections it developes, and with which his work abounds, sufficiently compensate for the errors of credulity, he is justly, though too frequently reproached with.

Galen, the most illustrious man after Hippocrates, has left behind him three books on the properties of aliments:—one on those which form good or bad juices; one on attenuating regimen; another on the exercise called the "little ball," a sort of game somewhat similar to tennis.

In order to proportion the rules of health suitably to the different circumstances in which individuals may be placed, Galen divides people into three classes.

1st. Into those who are naturally healthy, vigorous, and masters, in consequence of their circumstances, of the time and care necessary to be devoted to their health.

2d. Those of a feeble and delicate constitution; and

3d. Those whose indispensable business, public or private, does not permit them to eat, drink, or exercise themselves, at stated or regular hours.

The works of Cornaro, so often quoted, on the advantage of sobriety; Mercurialis on the gymnastics of the ancients; and Chancellor Bacon's treatise, entitled *Historia Vitæ et Mortis*, stand among the most distinguished productions of the latter period, on the subject of the preservation of health, through the medium of a well-regulated diet. Cornaro claims considerable attention, his book being the result of his own experience, and because he proves that man, by studying himself, and possessing strength of mind enough to place himself above the seductions of pleasure, only to follow the laws of reason and necessity, may bring his constitution to perfection, and renovate his organs weakened by intemperance. He also teaches us in that with which we are but little acquainted—namely, the difference there is between the measure of want, and that of pleasure—how much we are the dupes of our own sensations; above all, since the art of disguising the gifts of nature has created artificial wants and factitious appetites: and he has called by the name of *hunger*, every sensation that is not clogged with satiety. To be brief, the history of Cornaro, may be placed among the number of beautiful experiments which have been made, with a view to ascertain the purity of health through the medium of diet: and as such, it has most contributed to establish the principles, and to assist in the progress, of the art.

A Jesuit, Leonard Lessius, who lived toward the end of the sixteenth century, previous to the death of Cornaro, struck with the force and beauty of his example, wrote a work on the same subject, which he concludes with a list of all the men known, whose temperate life led them beyond the ordinary limits of human life. This work is called *Hygiasticon, seu vera ratio Valetudinis bonæ.* One Thomas Philologus of Ravenna, also, after the example of Cornaro, had equally written a treatise, entitled *De Vita Ultra annos centum et Viginti propaganda; Venice.* 1553. He notices a period when, at Venice, he saw several of its senators, who had attained the age of one hundred years, shew themselves in public, surrounded and caressed with those marks of respect and veneration due to their patriarchal ages, their dignities and distinguished virtues; and he traces to debauchery and intemperance the rarity of similar instances of health and longevity. Philologus was the first who declaimed against churchyards, for the interment of dead bodies, in towns. Cardan also wrote four books on the preservation of health. In the three first, he treats of aliments; in the fourth, of old age: the example of Cornaro is the object of his admiration, and the basis of his precepts; he censures Galen, and brings forward as a proof of the justness of his reproaches, that this celebrated physician died himself at the age of seventy-five. Another proof of the correctness of his extraordinary mind is that where he condemns exercise as prejudicial to health; and that by comparing the longevity of trees to the ordinary duration of animal life, he attributes the long life of the first to their want of motion.

Among the productions of this period, must not be over-looked the six books of Jerome Mercurialis*, on Gymnastics. The three first treat of the

* It is eloquently insisted upon by Mercurialis, that gluttony is the peculiar cause of every disease; and this opinion is not only confirmed but insisted upon by

different objects as regards exercise, and of the different kinds of it in use among the ancients: the three last books treat of the effects of these exercises; and of their use in strengthening the body and preserving health. It is there that we meet combined in works of one individual, more erudition, and a better judgment, than is to be met with in any other author: Haller, nevertheless, reproaches him with being too partial to the ancients; and not only with not having said any thing absolutely new as regards the exercises in use among the moderns, but even with having placed riding as among the inconveniences prejudicial to health: "Doubtless," observes Haller, "because this exercise was not among the number of those in which the ancients delighted." It is towards the end of the period of which we are now speaking, that Bacon's treatise, "*Historia Vitæ et Mortis*," must be placed. The object of this work is to discover the causes of natural death, and by that means to find out those of prolonging, as much as possible, the ordinary term of human life. The living man is continually losing, and continually repairing the loss he sustains—that is, the constituent parts of the living body are continually on the decay, and a variety of causes are incessantly carrying them off; several of its organs are constantly engaged in separating humours, which pass off loaded with a part of its substance, consumed by the united action of air and caloric; while internal friction, by a pulsatory motion, detaches its particles. In this manner the animal machine is continually being destroyed; and, perhaps, at distant periods of life, it does not contain a single particle of the same constituent parts*. But this reparative faculty becomes exhausted, and man dies. To diminish the activity of the causes which dissipate, attenuate, and destroy; to maintain the faculty which repairs, to soften and render pliable the parts whose inclination is opposed to the effects of the reparative faculty, would be the means of prolonging human life as much as the organisation of our bodies would permit. It was on these simple ideas that the illustrious Bacon established plans of investigation worthy of reflection, and which may still, in our time, furnish great and important subjects for meditation. Bacon, in the greater part of the subjects which he has handled, has rarely put his pen to the work, where he has not always shewed extensive views, plans, or research, fertile in consequences, a great divestment of prejudices, and ideas accredited by habit, a continual call to experience, and a constant applica-

Hippocrates, Solander, Cato, and others, but it is supported by the common observation and experience of mankind.

* Speaking of Hippocrates, Galen informs us that the whole constitution of the body may be changed by diet; that we should use those kinds of meats which are best suited to our own particular bodies, age, temperature, distemperature, and complexion; or, in plainer language, that every man ought to adopt his aliment to his own particular constitution.

tion to stick to nature, and to look to her alone for his guide. He was truly a great man; and placed in the order of time, between the revival of letters and that of the first progress of the physical sciences, he seems to have made his appearance to put an end at once to that barren admiration in which the ancients were held, and to cause the study of nature to succeed that of books; and to add to the riches reconquered by the patient commentator of antiquity, the still more fertile products of an active observation, and an indefatigable experience.

At this period, the circulation of the blood was not discovered; they had not learned to weigh the air, nor was any thing concerning the phenomena of the barometer known. The thermometer was not invented; and the means of experiment, imperfect and incorrect, only left for curious men, to study nature and appreciate its phenomena, the chance of stumbling over them, without any semblance of the power to submit them to observation and calculation. Sanctorius made his appearance, and already he had conceived the first idea of a thermometer—that of a fixed point, from whence its gradation might commence, and from the application of this instrument to the examination of febrile heat. But that which rendered the name of Sanctorius immortal, was the fine series of experiments which he made upon the insensible perspiration which he conceived to exist, with as much genius as he employed patience in the execution of it. He was the first who thought of comparing with the food taken in, the quantity of excrementitious matter evacuated, and to make a comparative estimate of them in weight, by weighing his own body under different circumstances relative to evacuations; by which means he correctly ascertained the quantity which escaped through the medium of insensible perspiration. Sanctorius does not give the detail of his experiments; He only presents their results, which do not at all appear exact, as have since been demonstrated by some of a more recent date.

As regards the progress of public health in the theory of diet, there necessarily results from the improved knowledge of man, and from that of the things whose influence he may have experienced, knowledge worthy of further cultivation.

Arbuthnot and other writers have produced very extensive works on aliment, in which, if we except the first mentioned, there is more display of learning than real physical knowledge:—of this latter kind are the treatises of Pisanelli, Nonnius, Melchior Sebiz—they are all nevertheless valuable, as uniting in one point of view the labours of the ancients, and in making their doctrines well known. Others, such as that of Arbuthnot, just mentioned, with learning less prolix, present explanations often too wide of the truth, of the chemical knowledge of their time, and particularly analyses by fire; there is nevertheless in them a philosophical order, with some well regulated practical observations, which evince a wise and judicious mind. The science of chemistry at length unfolding more simple means of analysis, rendered still more easy the examination of animal and vegetable bodies, and the comparison of their distinctive qualities. Then it came that all that was capable of being made correctly known, on the peculiar nature of alimentary substances, on the variety of aliment contained by them, on the nature of mucous bodies, considered as mucilaginous in fermentable juices, gelatinous matter, animal as well as vegetable, has been collected with equal judgment and learning, by the celebrated Long, in his treatise on diet. Cullen, at the commencement of his Materia Medica, has likewise bestowed some excellent considerations upon different parts of alimentary substances.

It would be an unpardonable omission in this place not to mention, among the number of men whose works have eminently contributed to the perfection of eating and drinking, the name of Parmentier, a Frenchman, whose labours, constantly directed to the public good, have made known the nature and use of many nutritive substances, particularly those of the farinaceous kind, and rescued from unmerited contempt one of the most abundant and useful articles of food; and which constitutes not only a general blessing to the poor of all countries, but a nutritive and wholesome source of dependence during times of scarcity—namely, the potatoe.

By the correctness of its descriptions, botany has instructed us how to distinguish useful food and agreeable seasoning, from destructive poisons, in all classes of aliment too much sought after: and the observations of many naturalists on mushrooms and poisonous plants, ought not to be passed over without honorable mention. Nor should we here forget to associate with such industrious and meritorious names, those, who by their labours have enlightened their fellow subjects, and warned them against the dangers to which they are too frequently exposed, and which have called forth prohibitory laws against the use of vessels and utensils made of COPPER and LEAD, under circumstances where these culinary articles are liable to be attacked by the alimentary matter which they are destined to contain, and thus be the channel of conveying destructive germs into the system, under the delusive external appearance of a salubrious nourishment, and of an agreeable fluid. The recent experiments of the British and other chemists have taught also the limits that ought to be observed between the useful and destructive properties of vegetable, mineral, and animal substances, not only as regards their medical, but also their dietetical, properties.

And, lastly, the inquisitive eye of the anatomist directs itself over every living thing, and compares its structure with that of man, and places upon a parallel all the systems which compose the apparatus of their life. From man to Zoophytes, the French naturalist, Cuvier, has investigated and developed the structure of the viscera, the dispositions of the nervous and muscular systems. He demonstrates in what order of animals the nutritive liquid circulates by the contractible power of the heart and arteries, and is carried from the centre to the extremities and surfaces, in order to be carried back again to the centre: in others, the same fluid, only stagnated in the intestines of the viscera, appears to be stationary, and lubricates the parts which it cannot nourish by rendering them moist and pliant. In both, he developes the structure of the organ, by which the ambient air is made subservient to the mechanism of actual breathing: he shews us the universality of the respiratory function, superior even to that of the circulating one, and consequently with nutrition. Thus, the first object of the organisation of living beings—the support of animal life—is seen, and however simple or complicated its mechanism may be, it inviariably reduces itself to a single problem; namely, that of placing in one constant relation the atmospheric fluid with the alimentary juices.

If we reflect upon the admirable uniformity which prevails throughout the works of nature, both in the production and dissolution of matter, it will be found that she invariably moves in a circle; that in the perpetual destruction as well as in the subsequent demolition of bodies, she is always equally new and equally perfect; that the smallest particle, though invisible to our eyes, is usefully employed by her restless activity; and that death itself, or the destruction of forms and figures, is no more than a careful decomposition, and a designed regeneration of individual parts, in order to produce new substances, in a manner no less skilful and surprising. It may further be observed, that in the immense variety of things in the inconceivable waste of elementary particles, there nevertheless prevails the strictest economy; and nothing is produced in vain—nothing consumed without a cause. We clearly perceive that all nature is united by indissoluble ties; that every individual thing exists for the sake of another, and that not one of them can subsist without its concomitant. Hence it may be justly concluded, that man himself is not an isolated being, but that he is a necessary link in the chain which connects the universe. And, although it be true that our knowledge of nature is still very imperfect, yet this circumstance ought not to deter us from investigating the means which may lead to its improvement. All men have not sufficient power to explore and acquire an extensive and accurate knowledge of nature; but those are inexcusable who remain entire strangers to her ordinary operations, and especially if they neglect to cultivate a proper acquaintance with the constitution of their own frame. If, indeed, men were fixed to the earth, as the trees are by their roots, or if from mere animal instinct they were induced to search into the causes of our physical life, we then should vegetate like plants, or live like irrational animals. But in the character of creatures who ought to choose and reject agreeably to the dictates of reason, a more assiduous and minute study of nature, as well as of our own frame, is indispensable; because the physical constitution of man cannot subsist, unless he secure her intentions, and co-operate with her beneficent efforts. This, however, cannot be accomplished without much patience and perseverance.

It has been remarked, that medicine is an uncertain, fluctuating, and precarious art. One doctrine, for instance, considers the mass of fluids as the primary cause of all diseases; another ascribes them to the irregular action of the solids—others again consider that as the cause of the disorder, which many are inclined to represent as the effect. Thus different schools promulgate different tenets relative to the origin of diseases; though ultimately, with respect to matters of fact, they must all necessarily agree. Nor is this diversity of opinion in the least degree detrimental to the practical department of medicine, provided the mode of treatment be not regulated by hypothetical notions. It is sufficient security to the patient, if his physician be thoroughly acquainted with the symptoms of the disease, and able to distinguish them from those of any other malady. In this respect the medical art is truly excellent, and stands unrivalled—for the nature of diseases remains invariably the same. The accurate observations made by Hippocrates two thousand years ago, on the symptoms and progress of diseases, recur to the medical practitioner of the present day, in a manner sufficiently regular and uniform: nor should it be otherwise, when nature is invariably pursuing the same course, whether in a healthy or in a diseased action of the body.

Man is subject to the same destructive agents from without by which the lower animals are affected, and for a variety of reasons he is more frequently exposed to diseases and pain than these. The inferior creatures, in the first place, are unquestionably provided with a more active instinct, by which nature teaches them, from their very birth, to avoid every thing that may prove hurtful, and to choose whatever may have a salutary influence on their existence. Few traces of this beneficial instinct can be discovered in the human race. Our own experience, or the instructions of others, which are likewise founded on experience, must gradually teach us the wholesome or pernicious qualities of the objects of the material world. Reason, indeed, that peculiar faculty of man, compensates in a great measure for the want of this instinct, as it directs his choice in pursuing what is useful, and in avoiding what is injurious; yet, at the same time, the want of instinct in man is the source of many sufferings in the earlier years of his life. He is born without covering, to withstand the effects of climate; without the means of defending himself in his helpless state; and without instinct, if we except that of sucking. He remains much longer incapable of providing for his own preservation, and stands in need of the assistance of his parents for a much greater number of years, than any other animal with which we are acquainted. Again, mankind in large and populous towns, it is universally admitted, have much degenerated in bodily strength, energy of mind, and in their capacity of resisting the noxious agency of powers which affect them from without. The progressive cultivation of the mind, together with the daily refinements of habits and manners, are ever accompanied with a proportionate increase of luxury. But as this change, from a robust to a more relaxed state of life, has been productive of no difference in the causes generating disease, to which we are even more subject than formerly, we must necessarily suffer by the concomitant effects. Indeed, it is found, that in proportion as the refinements of luxury increase in a nation, the number and variety of diseases also increase. On the contrary, the more uncivilised a people continue, and the more their habits and customs approximate to a state of nature, they are, proportionally, less affected by the causes of disease. The emotions of the mind, again, affect the human race in various ways, and more violently, and, for the time of their duration, more obstinately than any other living creature. Another source of diseases among mankind are various specific contagions, of which, perhaps, the greater number originate in the surrounding atmosphere. This is highly probable, at least with respect to marshy exhalations, and the effluvia of places rendered unwholesome by different manufacturing processes. Another class of contagious miasmata consists of those which cannot be traced to any certain origin. In fine, we daily observe their migrations, and we perceive them moving from one individual to another, without fixing any stationary residence; yet they have frustrated, hitherto, every attempt made towards their extirpation. Of this unsettled nature are the small-pox, the measles, the hooping-cough, the influenza, and many other epidemics. All these conspire to impair health, and shorten the duration of human life.

The greater number, also, of what are termed fashionable complaints, which produce decided effects on the constitution, are nearly united to each other. At one time, the gout was a very rare complaint, compared with what it is at the present day; it used to attack only the external parts of persons advanced in years, though now it has become a constitutional disposition—a juvenile complaint, torturing the patient in a thousand different forms; and instead of the old gout, which used to confine itself to the hands and feet, we now hear of the nervous gout, the gout in the head, and, frequently, the fatal gout in the stomach. Neither rank, age, sex or condition, appear to be exempt from this insidious disorder. The next, and still more general malady of the times, is what are called nervous diseases; that is, an extreme sensibility to every atmospheric change, or rather, a constant sensible relation to its influence. By consulting their sensations, these living barometers announce more correctly than the artificial ones, not only the present, but the future changes of the weather. Nor less characteristic of the present generation, but more painful, are the fashionable nervous and hypochondriacal diseases. Such insidious and formidable tormentors, not only derange our physical well being, but make such inroads upon our tranquillity and contentment, as to cloud our fairest prospects of happiness; without depriving us of life, they render it an insupportable burthen, and without inducing death, they not unfrequently make him a welcome visitor.

It is unnecessary to detail the diversified shapes in which these and other maladies present themselves. It is sufficient to observe, that however intimately the mind appears to be connected with these phenomena, we can nevertheless account for them only from physical causes. Indolence is a clog to health. The poor man has no excuse for it; and rich people have it always in their power to exercise themselves, by various means, as may suit their circumstances and inclinations. Gymnastic exercises are various, and may always be accommodated to the constitution of the individual. Temperance is a virtue, and those who practise it receive its reward—and by the united benefits of temperance and exercise, the body is defended from disease, and health is the consequence. In fine, so much does the health of people in general depend upon temperance and simplicity of diet, that were more attention paid to these, particularly the latter, fewer of those diseases which are the scourge of the human race, would be met with. Unfortunately, however, for mankind, many of the most salutary intentions of the food destined for the human race, are too frequently neglected. The sophistications introduced by modern cookery are frequently carried to the most extravagant pitch, that it seems almost to be forgotten, that it is by wholesome and plainly cooked aliments that our growth attains its proper period of perfection; that our limbs are strengthened; that those organs destined to the perfection of the senses are reanimated; and, that it is from the juices contained in our food, that the texture of the mortal fabric is supported, and enabled to supply the waste to which it is subjected from the various actions and occurrences of life. As regards the pleasures of the table nothing can be more recommended in their indulgence than moderation for health's sake; and in the choice and quality of the materials with which it is to be decked, the taste of the country one resides in, or has been accustomed to, may be judged good and rational. Nature lays us under an obligation to eat and drink for the support of health and vigour; she has also endowed us with faculties and powers to choose and prepare that diet which is most salutary and agreeable: the greatest danger we are exposed to is that of consulting quantity rather than quality; and hence of being tempted to exceed the due measure requisite for subsistence;—and who does not know, that the oftener a fabric is shaken, the sooner it will fall; the more violence used to a delicate machine, the sooner it will be destroyed?—And no machine is so exquisitely delicate as the human body.

As nature is equally the subject of physic and of poetry, we find that the sons of Homer and Æsculapius agree, in giving salutary instructions to mankind; but as the former convey their admonitions in the most tuneful manner, we shall conclude these introductory observations with a quotation from one of them, not inappropriate to the subject.

What, and how great the virtue and the art
To live on little, with a cheerful heart!
(A doctrine sage, but truly none of mine)
Let 's talk, my friends, but talk before we dine:
Not when the gilt buffet's reflected pride
Turns you from sound philosophy aside;
Not when from plate to plate the eye-balls roll,
And the brain dances to the mantling bowl.

* * * *

Now hear what blessings temperance can bring;
(Thus said my friend, and what he said I sing).
First Health: the stomach cramm'd with ev'ry dish,
A tomb of boil'd and roast, and flesh and fish,
Where bile and wind, and phlegm and acid jar,
And all the man is one intestine war.
Remember oft the scholar's simple fare,
The temperate sleep, and spirits light as air.
How pale each worshipful and reverend guest
Rise from a clergy, or a city feast!
What life in all that simple body? say:
What heavenly particle inspires the clay?
The soul subsides and wickedly inclines,
To seem but mortal, ev'n in sound divines.
On morning wings, how active springs the mind
That leaves the load of yesterday behind.

Hence, of all the knowledge necessary to suffering humanity, the most important for the preservation of man, and for the perpetuity of all the enjoyments of nature, is a perfect acquaintance with the aliments best calculated to form our constitution, to fortify all our members, to strengthen all those organs destined to the perfection of the senses, and to be the mediators of talents, mind, and genius. It is of the juice expressed from our alimentary fluids, that is formed the tissue of our frail machine; it is to the chyle that proceeds from it, that our blood, flesh, nerves, organs, and all our senses, owe their existence and sensibility.

J. S. F.

Patriot Square, Cambridge Heath,
March, 1833.

CONTENTS.

The heads of the articles are only given here, the sub-heads, illustrations, and notes, can only be consulted by reference.

DICTIONARY OF DIET, &c.

A.

ACIDS.—Most of the acids are substances which produce that sensation of the tongue called *sour;* but others are classed with them which have not this characteristic, though they possess some of the properties of acids, which differ from each other, not only in appearance, but in their properties also, as much as any class of bodies we are acquainted with: it is, therefore, not a little difficult to give a definition of an acid. In general they are liquids, but some of them take a solid, and others a gaseous form; some are mild, others are corrosive; some are pungent and volatile; others fixed and inodorous. They owe their origin to the combination of certain substances with oxygen, which has been called the acidifying principle. They have the properties of changing the blue, green, and purple juices of vegetables, to red; and of combining with alkalies, earths, or metallic oxides, so as to form those compounds called salts.

Acids were formerly divided into three classes—namely, the animal, the mineral, and the vegetable acid; though modern chemists have adopted a more useful and scientific method by arranging them under—the undecomposable, and those which are formed of two principles, while the acids which are formed with more than two principles compose the second class.

ACID, ACETIC.—An acid of the second class. It exists already formed in the sap of many plants, either free, or combined with lime or potass; it is generated during the destructive distillation of vegetable matter, and is an abundant product of the acetous fermentation. Common vinegar, the acidifying principle of which is the acetic, and is commonly prepared in this country by fermentation from an infusion of malt; and in France, from the same process taking place in weak wine. The vinegar thus obtained is a very impure acetic acid, containing saccharine, mucilaginous, and other matters, existing in the fluid from which it is prepared. It is separated from these impurities by distillation; and is rendered stronger by exposure to cold. Concentrated acetic acid is best obtained by the decomposing the acetates either by sulphuric acid, or in some instances by heat.—See *Vinegar.*

ACIDS, ANIMAL.—Several acids are met with in animal bodies; such as the sulphuric, muriatic, phosphoric, acetic, &c., which belong equally to the mineral or vegetable kingdom.—(See *Acid, Vegetable*). Under this head are included only such acids as are supposed to be peculiar to animal bodies: *e. g.* the lactic, fermic, ammonatic, &c.

ACID, PYROLIGNEOUS.—Vinegar distilled from wood, employed for chemical and antiseptic purposes.—See *Pyroligneous*, &c.

ACIDS, VEGETABLE.—Those compounds are regarded as vegetable acids which possess the properties of an acid, and are derived from the vegetable kingdom.—See *Acid, Acetic.*

ACIDULOUS.—Subacid. Somewhat acid, applied to substances in which there is an excess of acid; *e. g.* cream of tartar, green fruit, &c.; and also to mineral waters which contain so great a quantity of carbonic acid gas as to render them acidulous, or somewhat tart to the taste.

ACORN.—The fruit of the oak-tree, and the food of the early ages, though neglected after corn was cultivated. The acorn is of little use to us at present, except in fattening hogs, other cattle, and poultry. Among the Spaniards, the acorn, or *Glans Iberia*, is said to have long remained a delicacy, and to have been served up in the form of a dessert. In times of famine, acorns have been sometimes dried, ground into meal, and baked as bread. Bartholin relates, that they are used in Norway for this purpose. The inhabitants of Chio held out a long siege without any other food; and during a long siege, and in a time of great scarcity in France (1709), this production was resorted to for sustenance.

Acorns are said not only to be hard of digestion, but also to occasion headaches, flatulency, and colicks. In many places, instances are not wanting where they have supplied a salutary and nutritious food. With this intention they are first boiled in water, and separated from the husks, and then dried and ground: the meal is mixed with about one-half or one-third of corn flour. From some late reports of the Academy of Science at Petersburgh, we are informed that acorns are the best substitute for coffee that has been hitherto discovered. To communicate to them the oily properties of coffee, the following process is recommended. When the acorns have been toasted brown, add fresh butter in small pieces to them while hot in the pan, and stir them with care; cover the pan and shake it, that the whole may be well mixed.

The acorns of the holm oak are formed at Venice into cups, one inch and a half in diameter, and somewhat less in depth. They are used for dressing leather, and instead of galls for dying woollen cloth black.

A decoction of acorns is reputed good against fluxes and colicks: the powder has been recommended in agues, but we have now much surer remedies.

ADIPOCIRE.—A fatty substance formed from animal muscle. When a piece of fresh muscle is exposed for some time to the action of water, or is kept in moist earth, the fibrin entirely disappears, and a fatty matter called adipocire, remains, which has some resemblance to spermaceti. It was formerly thought that the fibrin was really converted into adipocire; but Gay-Lussac (*Ann. de Chim. et de Pharm.* vol. iv.), and Chevreul, maintain that this substance proceeds entirely from the fat originally present in the muscle; and that the fibrin is nearly destroyed by putrefaction. Dr. Thompson, however, maintains, that the conversion of fibrin into fat does not occur in some instances, and has related a remarkable case in proof of this opinion.—(See *Ann. Phil.* vol. xii. p. 41).—According to M. Chevreul, adipocire is not a pure fatty principle, but a species of soap, consisting chiefly of margaric acid, in combination with ammonia, generated during the decomposition of fibrin.—See *Fibrin.*

ALBUMEN, ANIMAL.—One of those animal substances which is neither acid nor oleaginous. It enters largely into the composition of animal fluids and solids. Dissolved in water, it forms an essential constituent of the serum of the blood, the liquor of the serous cavities, and the fluid of dropsy. In the solid form, it is contained in several of the textures of the body, such as the cellular membrane, the skin, glands, and vessels. Hence it appears, that albumen exists under two forms, liquid and solid. The liquid form is best procured from the white of eggs, which consists solely of this principle, united with water and free soda, and mixed with a small quantity of saline matter. In this state it is coagulated by heat, alcohol, and the stronger acids. It is precipitated by several re-agents, especially by metallic salts. It coagulates without appearing to undergo any decomposition.—*Brande's Chemistry.*

ALBUMEN, VEGETABLE.—There are vegetables which contain a substance coagulable by heat, and which is very analogous to animal albumen. It was detected in the bitter almond by Vogel; in the sweet almond by M. Boulay; and probably exists in most of the emulsive seeds. —*Annals of Philosophy*, vol. xii. p. 39.

On exposure to the atmophere in a moist state, albumen passes at once to the state of putrefaction. From its coagulability, it is of the greatest use in clarifying liquids; and it likewise possesses the remarkable property of rendering leather supple, for which purpose a solution of whites of eggs in water is used by leather dressers. Orfila has found the white of egg to be the best antidote to the poisonous effects of corrosive sublimate. Albumen may be obtained in the solid form by agitating white of egg with ten or twelve times its weight of alcohol.

ALCOHOL.—The inebriating ingredient of all vinous and spirituous liquors. It is the product of the vinous fermentation; a colourless elastic fluid, of a penetrating odour, and burning taste; highly volatile; boiling, when its density is 0.820, at the temperature of 176 F. According to Gay-Lussac, the specific gravity of its vapour is 1.613. Like volatile liquids in general, it produces a considerable degree of cold during its evaporation. Of all fluids, it is the only one which has not hitherto been congealed. It is highly inflammable, and burns with a lambent yellowish blue flame. It unites with water in every proportion.

Of the salifiable bases, alcohol alone can dissolve potassa, soda, lithia, ammonia, and the vegetable alkalies. All the salts which are either insoluble, or sparingly soluble in water, are insoluble in alcohol. The efflorescent salts are, likewise, for the most part insoluble in this menstruum; but, on the contrary, it is capable of dissolving all the deliquescent salts, except the carbonate of potassa. Many of the vegetable principles, as sugar, manna, camphor, resins, balsams, and the essential oils, are soluble in alcohol.

Alcohol is inferred to consist of,

Carbon	.. 12	2 atoms	..	52.17
Oxygen	8	1 atom	..	34.79
Hydrogen	3	3 atoms	..	13.04
	23			100.00

These numbers are in such proportion, that alcohol may be regarded as a compound of fourteen parts, or one atom, of olefiant gas, and nine parts, or one atom, of water.

Alcohol was discovered upwards of 600 years ago, though it is said to have been known to the Chinese time immemorial, as their varnish is dissolved in alcohol, although this is not clearly proved. This highly-purified spirit is never given internally in a pure state; but is mostly employed as the basis of tinctures, and to dissolve resinous matter. If a small quantity be added to water, it acts the same as common spirits, but with this essential difference; when newly made, it seems to contain much æthereal spirit of a bad and destructive kind, which it loses on keeping: on this account it is that raw spirits abroad are found so very noxious. The specific gravity of alcohol to that of distilled water, is as 815 to 1000. It is the basis of all wines, and may be distilled from all with a boiling heat. It differs in flavour according to the substances from which it is prepared, or the artificial additions. It appears in different forms—rum, brandy, usquebaugh, &c.; mixed with equal parts of water, it forms *proof spirits*. British spirit is a mixture of it with essential oils &c., and the common people prefer it to good spirit: hence distillers find, that spirit distilled from sugar has not so quick a sale as that from malt.

As regards the bad effects from the abuse of spirits, they are very numerous, and we consequently see their consequences. The person first loses his appetite; to remove the consequent langour the dose is increased, and at length all appetite is lost; the liver becomes sympathetically diseased; no bile is secreted; the mesenteric glands swell, and general induced debility ensues. The lungs lose their strength, asthma, and shortness of breath, follow, with sometimes palsy: at last there is a confirmed asthma or dropsy, on the gin-*cough*, which constitutes true pulmonary consumption, in which the tubercles suppurate very rapidly. These effects are often witnessed in porters, coachmen, soldiers, &c. At Petersburgh, a physician calculated that 635 die in ten months from this cause only.

Externally applied, alcohol causes all the vessels to contract: if it be confined to the skin it causes a glow; but if not confined, and allowed to evaporate, the evaporation produces cold. Given *internally*, if the dose be too large, it kills like lightning, by exhausting the irritability, so that the blood does not coagulate, and the muscles remain flaccid. In cases of great langour, nervous weakness and spasms, where æther is proper, one to two drachms of alcohol will have a good effect.

The alcohol of the 'London Pharmacopœia,' is directed to be made as follows:—Take of rectified spirit, one gallon; subcarbonate of potass, three pounds; add a pound of the subcarbonate of potass, previously heated to 300°, to the spirit, and macerate for twenty-four hours, frequently stirring them; then pour off the spirit, and add to it the rest of the subcarbonate of potass heated to the same degree. Lastly, with the aid of a warm bath, let the alcohol distil once: keep it in a well stopped bottle. The specific gravity of alcohol is to the specific gravity of distilled water, as 815 to 1000. To obtain pure alcohol, Rouelle recommends to draw off half the spirit in a water bath; to rectify this twice more, drawing off two-thirds each time; to add water to this alcohol, which will turn it milky, by separating the essential oil remaining in it; to distil the spirit from this water; and, finally, to rectify it by one more distillation.

ALKALIES.—The word *alkalé* is of Arabian origin, and signifies the dregs of bitterness. The alkalies have an acrid and urinous taste; they change the blue juices of vegetables to a green colour, and the yellow to a brown,* and have the property of rendering oils mixible with water. They are incombustible, but may be rendered volatile by great heat; they are soluble in water, form various salts in combination with acids, † and act as powerful caustics when applied to the flesh of animals. There are three alkalies; two of which, potass and soda, are called the *fixed*, because they will endure a great heat and still remain unchanged; the third, the volatile alkali. The alkalies are compound bodies. Potass is chiefly procured by lixiviation from the ashes of burnt wood, and other vegetable substances; but as it exists in minerals and earths, there is reason to

* Although the effect of alkalies on the blue juices of vegetables is almost universal, we know of one exception—namely, tincture of litmus and litmus paper, which are always rendered more intensely blue by the addition of alkalies.

† Potass becomes comparatively mild by its union with carbonic acid; and the most caustic soda, if united to corrosive muriatic acid, forms the mild salt used at our tables.

believe that plants receive it from the earth during vegetation: hence it may be proper to entirely discard the word vegetable when speaking of this substance. Soda is derived from the ashes of marine plants; but its great depository is the ocean, soda being the basis of sea salt, or muriate of soda.—See *Soda Water*.

Potass was called the vegetable alkali, because it was supposed to exist only in vegetables, though it is now found in some minerals. Soda was called mineral alkali, because it exists in mineral salts; although it is also procured by chemical process from sea-salt, which is found in numerous masses under the earth's surface in many countries, particularly in England, Poland, Hungary, and Spain. The alkalies have various uses in surgery, medicine, the arts, and manufactures. The name of the volatile alkali is ammonia, which is procured from all vegetable and animal substances in a state of putrefaction. In England, however, it is generally procured by dry distillation of bones, horns, and other animal substances. It is also found in mineral water. According to Dr. Austin, ammonia is formed whenever iron rusts in water which has a free communication with the air.—See *Acids*.

ALE.—Ale is made by infusing malt in hot water, and then fermenting the liquor by the addition of barm or yeast. Hops (which see) are also an essential ingredient.

Various sorts of ale are known in Britain, particularly *pale* and *brown*: the former is brewed from malt slightly dried: and is esteemed more viscid than the latter, which is made from malt more highly dried. Many places in England are famous for the excellency of their ale, particularly Dorchester in Dorsetshire; and Burton in Staffordshire. The ale of the latter country is by some deemed incomparable, and great quantities of it are sent down the Trent to Hull, and exported to other parts of the kingdom and abroad. This liquor is the favourite beverage of the peasantry in most of the English counties. Ale is of so great antiquity in this kingdom, that, in the year 1492, we meet with a license from Henry VII. to John Merchant, a Fleming, to export fifty tuns of this liquor.—See *Rees' Encyclopæd.* Art. *Beer*.

To those whose diet is not very nutritive ale may be considered as not only an innocent, but a salubrious drink. In the observations relative to the bills of mortality in the year 1662, by an ingenious citizen, concerning the increase of some diseases and the decrease of others, we meet with the following remark: "The stone and strangury decreaseth from the drinking of ale." There existed, for a length of time, a strong prejudice against hops, which were looked upon as pernicious weeds; but now it is universally admitted, that they constitute the most valuable ingredient in malt liquors.—(See *Hops*). Independent of the flavour and tonic virtues which they communicate, they precipitate, by means of their astringent principle, the vegetable mucilage, and by this means remove from the ale the active principle of its fermentation: consequently without hops we must either drink our malt liquors new and ropy, or old and sour.—See *Malt Liquors*.

[To make a thirty-six gallon barrel of ale, take malt, usually the pale, two and a half bushels; sugar three pounds, just boiled to a colour; hops, two pounds eight ounces; coriander seeds, one ounce; capsicum, half a drachm. Work it two or three days, beating it well up once or twice a day. When it begins to fall, cleanse it by adding a handful of salt, and some wheat flour mixed with twenty grains of coculus Indicus].—*Gray's Supp. to the Pharmacop.*

Strong ale is, unquestionably, the most nutritive of all malt liquors; but being more difficult of digestion than the other malt drinks, it cannot with propriety be taken but by those who are naturally of a strong constitution, and who use a deal of exercise. Indeed, it is generally admitted by those who are skilled in the art of training, that a quantity of ale taken at every meal, will soonest bring the body up to the fullest extent of strength. It is affirmed by Jackson, the celebrated trainer, that if any person, accustomed to drink wine, would but try malt liquor for a month, he would find himself so much the better for it that he would soon relinquish the former for the latter. The best ale is made of fine pale malt, and with hops of the finest quality. It should sparkle in the glass, but the smaller the beads the better. In persons recovering from great constitutional debility, and whose stomach would not feel oppressed by it, a little good home-brewed ale would act as a restorative. It is a good dissolvent of cheese, and considerably tends to keep the bowels soluble, which the latter is disposed to constipate.—See *Beer—Porter.*

ALEXANDER, The Herb.—(*Alexander or Alexanders. Smyrnium Olusatrum. L.*)—This herb is much of the same nature as parsley. It is moderately hot, of a cleansing and deobstruent nature, nourishing and comforting to the stomach. The tender sprouts, buds, and tops, are to be chosen; the stalks are eaten in spring, and also in winter, when blanched and drenched with oil, pepper and salt; either by themselves or in composition with other salad herbs. It is also used in winter as a pot-herb. It grows naturally near the sea side, and may be often observed naturalized near old buildings. It somewhat resembles the celery in flavour, by which vegetable it has almost entirely been supplanted.

ALKALESCENCY.—An alkaline or bilious disposition, or tendency.—See *Solution.*

From the too great alkalescency inherent in the flesh of some animals, those of a carnivorous nature are commonly avoided, and the preference given to such as are of the graminivorous kind. It is, nevertheless, true, that some birds which live on insects, are admitted into our food; but few, without nausea, could long subsist upon these alone. Fishes, too, are an exception to this rule, from their living almost exclusively on each other. In these, however, alkalescency does not proceed to any great extent; but, whether from the viscidity of their juices, the want of heat, or some other peculiarity in their economy, is not easily to be determined.

The difference of age determines the alkalescency. The older the more alkalescent, in consequence of their continual progress to putrefaction. The wild or tame state of the animal varies the alkalescency of the food, and is a circumstance which again depends upon its exercise. Cullen mentions a gentleman who was excessively fond of cats for food; for which purpose, he always fed them with vegetables, and kept them from exercise. The Romans, in the same manner, reared up rats when they intended them for food: the flesh of the partridge and the hen are nearly the same, with the exception only of the former being more on the wing; it is more alkalescent than the other. Tame animals are also commonly used without their blood, whereas the wild are usually killed in their blood; and on this account, as well as from the greater exercise they use, are more alkalescent.

The quantity of volatile salt afforded by any food, may determine its alkalescency. The older the meat the greater the proportion of it. It may also in some measure be determined from its colour—the flesh of younger animals being whiter and less alkalescent. A criterion is also formed from the colour of the gravy it gives out; judging of the degree of alkalescency from the redness of the juices. The flavour or redness of food depends much on its alkalescency, as also on the stimulus it communicates, and the degree of feverish heat it produces in the system—effects which are also connected with the viscidity of the food; on which account it is detained longer in the stomach, supplying thereby the want or absence of alkalescency.

There is another difference as regards animal food—namely, the nature of the fluids they afford; the whole of which may be comprehended from what has been said relative to alkalescency—the fluid produced being more or less dense and stimulating, in proportion as that prevails. Another difference is its perspirability. The sum total of all that can be said on this subject is, that such foods as promote an accumulation of fluid in our vessels, and dispose to plethora, are the least perspirable, and commonly give most strength—that the most alkalescent foods are the most perspirable, though the viscid and less alkalescent may attain the same property by long retention in the system. Little, if any, confidence is to be placed in what Sanctorius has said with respect to the perspirability of mutton, because he did not examine other meats in the same manner, in their perfect state; and still less of what Keil relates of oysters, as he himself was a valetudinarian; consequently an unfit subject for such experiments, independent in all probability of his being of a peculiar temperament.—See *Nutrition*.

ALIMENTS.—"By aliment," says Arbuthnot, "I understand every thing which a human creature takes in common diet." Simplicity in the choice of our alimentary materials, guards the appetite from being stimulated beyond its natural wants; indigestion and its consequences are prevented, and the general health more uniformly maintained. The multiplied combinations of substances, though they may please the palate, are not conducive to health. All substances which contain much jelly, whether animal or vegetable, are nourishing; for this alone affords nutriment; and the hard, watery, and saline particles of food cannot be assimilated or converted into chyle. Nourishing substances would indeed be more conformable to nature; but as our appetite generally incites us to eat more than is necessary, we should acquire too much alimentary matter, and become too full of blood, if we were to choose only such articles of food as contain a great quantity of jelly. It is justly observed by Buchan, that "the great art of preparing food, is to blend the nutritive part of the aliment with a sufficient quantity of some light farinaceous substance, in order to fill up the canal without over-charging it with more nutritious particles than are necessary for the support of the animal. This may be done either by bread or other farinaceous substances, of which there is a great variety." Those, in fine, who are not engaged in hard labour or exercise, do not stand in need of such nutritious aliment as those whose nutritive fluids are partly consumed by muscular exertion, and violent perspiration. Those who have sustained frequent losses of blood, from whatever cause, will best restore it by strong and juicy aliment; which, on the contrary, ought to be avoided by the plethoric. Lastly, those whose constitution is weakened and emaciated by free-living and dissipation, ought not to eat much at a time, but rather repeat their meals more frequently, at proper and regular intervals.

It is impossible to determine by general rules, whether or not we ought to use articles of easy or difficult digestion during the healthy state of the stomach; every person, therefore, ought to pay attention to the effects which substances of different degrees of digestibility produce on the stomach. The chyle, when prepared of substances not easily digestible, is solid and concentrated, and consequently affords a substantial muscular fibre; but such substances as the stomach cannot digest, ought never to be used as food. The stomach is enabled to prepare the best chyle from simple substances, and will thence produce the most healthy fluids; consequently, it is an important rule of diet to eat, if possible, of one kind of meat only, or at all events, to eat of that dish first which is the most palatable.

At a table dietetically arranged, those foods ought to be commenced with which are most difficult to be digested, and the meal completed with that which is most easy; because the former require stronger digestive powers, and more bile and saliva, all of which become more defective towards the end of a meal. The power of digestion is unquestionably most vigorous and active when that organ is not too much distended; and the coarser kinds of substances also require a longer time for being duly assimilated.

Much controversy has arisen at various times among physiologists and philosophers, whether the Creator intended man to derive his corporeal support from the animal or vegetable kingdom, or from both. Dr. Lambe, among others, supports the vegetable system; for he has "ascertained that those who confine themselves to this aliment do not require any extraordinary stimulus; and they have not accustomed themselves to the use of wine or spirituous liquors." The late Baron Haller, on the other hand, maintained that the stomach of man is formed between that of carnivorous and herbivorous animals, namely, that it partakes of both; but he informs us, at the same time, that it approaches more to the graminivorous; and the late John Hunter asserted, that the human stomach is the link between animals that live on vegetables, and those which are entirely carnivorous. Mr. Abernethy inclines to this opinion, and does not believe that any difference exists in *chyle* formed from animal or vegetable food.

The great variety of substances which man is not only capable of digesting, but from which his organs can extract wholesome nourishment, contributes very essentially to his wide extension over the face of the habitable globe. In almost all ages there have been disputes concerning the food best suited to the nature of man; that is, whether a mixed aliment, or one purely animal or vegetable, be most favourable to the development of the bodily and mental power. Now, with regard to the effects of these aliments on man, it must be observed, that there are no persons who live entirely on vegetables. The Pythagoreans themselves ate milk; and those who do so, mostly, as the Pythagoreans, are weakly, sickly, and meagre; labouring under a constant looseness, and several other diseases. The hardy and robust never live on these, but chiefly such as gain a livelihood by the exertion of their mental faculties, as in the Indies, factors and brokers; and this method of life is now confined to hot climates, where vegetable diet, without incumbrance, may be carried to great excess. And, although it be granted that man is intended to live promiscuously on these different foods, yet the vegetable should be in a very great proportion.

The inhabitants of Lapland are said to live exclusively on animal food; though it is contradicted by Linnæus, who says, that besides milk, which they take in a sour state to obviate the bad effects of animal food, they use also *calamenyanthes*, and many other plants, copiously. Hence, there is no instance on record of any nation living exclusively either on vegetable or animal food, though there are some who take a greater proportion of the one than the other. For example, in cold countries, the inhabitants live chiefly on animal food, on account of the severity of the seasons, the smaller perspiration, and their less tendency to putrefaction. For the same reason, more animal food is recommended in winter than in summer.

Many sects, and whole nations, still, at the present day, (the Brahmins, for instance), abstain equally from animal food. The ancient Germans, also, who were much renowned for their bodily strength, lived upon acorns, wood-apples (the produce of the crab-tree, &c.), sour milk, and other productions of their then uncultivated soil. In the present mode of life, here, as well as on the Continent, a great proportion of the poorer class of country people subsist on vegetables; but although they duly digest their vegetable aliment, and become vigorous, yet it is certain that animal food would answer these purposes much better. Hence, in countries where the labouring class of people live principally upon animal food, they far surpass in bodily strength and duration of life those who subsist chiefly on vegetables.

As our stomachs could never endure the raw flesh of animals, it is boiled, roasted, baked, or fried, in order to promote its easier digestion: it is also seasoned in various ways, which improves and considerably alters the taste of it. Boiled victuals being moister than that otherwise dressed, agrees best with those that are of a dry and bilious constitution, who are inclined to constipation. Fried and roasted meats, on the contrary, are more suitable to those of a phlegmatic temperament, to such as abound with superfluous moisture, to those subject to defluxions, and similar distempers.

The following question, however, is of much more importance,—"*In what proportions should animal food be mixed with vegetables?*" Sanctorius has an aphorism, which says, "*Pondus addit robur*," (Weight gives strength), which may be explained from the impletion of the blood vessels, and giving a proper degree of tension for the performance of strong oscillations. Animal food, therefore, which gives most strength to the system, not only goes a greater way in supplying fluid, but also communicates to that fluid more density and elasticity.

Men, it is said, were at first fed upon figs, proof of which we have from their nutritious quality. In this respect, however, they were soon found inferior to animal food; and thus we daily see that men, in some measure, will work in proportion to the quality of their food. Wherever people are exposed to hard labour, animal food should be taken in the greatest proportion.

It has been said that the chief inconveniency of vegetable aliment is the difficulty with which it is assimilated, that is, its conversion into nutrition; which, nevertheless, with those of vigorous and robust health, and who accustom themselves to much exercise, is not liable to occur. The assimilation of vegetable aliment is more easily effected in warm than in cold climates, so that in the former it may be more plentifully used; and when joined to exercise, it imparts a tolerable degree of strength and vigour; and, although the general rule be in favour of animal diet, in giving strength, still there are many instances of it being produced, in a remarkable degree, from vegetables; which have the advantage of whetting the appetite, as being less liable to affect us from a full meal of it. And, independent of the disorders it is liable to produce in the stomach and intestines, and its falling short to give strength, it does not appear that any bad consequences can arise to the blood from a continuance in its use; for there is no instance of its peculiar acrimony having ever been carried there, and it is certainly less liable to putrefaction than animal food; nor without the utmost indolence, and a keen appetite, does it produce plethora, or any of its consequences; so that it may here be justly concluded that a large proportion of vegetable aliment is beneficial, consequently useful to the generality of mankind.

What are the effects of the variety of aliment?—This is another question that has elicited much controversy. It is asked, whether variety of aliment be necessary and allowable, or whether it is universally injurious? If variety of aliment be at all necessary, it is from the mutual advantages which animal and vegetable food have in correcting each other—a variety, therefore, of this kind seems necessary. Another very proper variety is that of liquid and solid food, which should be so managed as to temper each other. Aliment, especially, of the liquid kind, is too apt to pass off by stool before it be properly assimilated; while solid food makes a longer stay in the digestive organs. But whether variety of one kind be fit or necessary, as in animal food, such as beef, fish, fowl, does not belong to the question. It does not appear that any inconvenience arises from this mixture, or difficulty of assimilation, provided a moderate quantity be taken at a time. When any inconvenience does arise on this score, it probably proceeds from the circumstance that one of the particular substances in the mixture, if taken alone, would produce the same effects; and, in fact, it would appear that this effect is not promoted but obviated by the mixture itself. With respect to variety, however, the least that can be said against it is, that it is not without its disadvantages, as producing gluttony; aided by the cook it induces people to consume at one time more than they can conveniently digest; and hence, very justly, physicians have almost universally preferred simplicity of diet; for, in spite of rules, man's eating will only be measured by his appetite; and satiety is sooner produced by one than many substances. But this is so far from being an argument against variety, that it is, on the contrary, one for it, as the only way of avoiding a full meal of animal food, and its bad effects, is by presenting a quantity of vegetables.

ALIMENTS, CLASSIFICATION OF, *including Drinks and Spices, according to their particular salubrity.*

I. FOOD.—DIVISION FIRST.

CLASS I. Articles affording strong nutriment.

Order I. Vegeto-farinaceous substances.

Genus 1. With soft juicy fibres.

1. *Such as contain a saccharine matter:* as the skirret or sugar root, the common carrot, beet, and polypody root.

2. *Sweetish substances, affording a tender farina or meal:* as the parsnip, the turnip-rooted cabbage, the colewort, viper's grass, the goat's beard or salsify, Solomon's seal, parsley root, asparagus, turnips, and potatoes.

Genus 2. *Substances affording flour, or those of a viscous, earthy consistency,* viz. every species of grain, as wheat, rye, barley, oats, buck-wheat, millet, maize, or Indian corn, the chickling vetch, and the like.

Order II. Gelatinous animal substances.

Genus 1. *Of a soft and juicy muscular substance,* viz. veal, lamb, young beef, mutton, pork, venison, turtle, hare, rabbits, badgers, domestic fowls, pheasants, partridges, the greater number of land fowl, oysters, small lobsters, and fresh eggs.

Genus 2. *Of a hard and tough substance*, viz. all the animals beforementioned when old, as well as the bustard, the starling, the woodpecker, the sparrow, the goose, the duck, the lapwing; muscles, snails, crabs, hard-boiled eggs.

Order III. Fat or butyro-oleaginous substances.

Genus 1. *Of the sweet kind*, viz. cacao, sweet almonds, walnuts, hazelnuts, water-caltrops, chestnuts, beech nuts, cashew-nuts, pistachio-nuts, wild pine apples, milk, and fresh cheese.

Genus 2. *Of the bitterish and tart kind*, viz. bitter almonds, acorns, all the seeds of fruits, and olives.

Class II. Slightly nutrimental substances.

Order I. Those of a viscous and watery consistence, or those the vegetable mucilage of which is diluted with much water.

Genus 1. *Of a sweet taste*, viz. melons, and several species of pears and apples, sweet citrons, lemons, oranges, figs, mulberries, raspberries, sweet grapes, cherries, plums, jujube berries, dates, &c.

Genus 2. *Of a sweetish taste*, viz. green peas and beans, white cabbage, cauliflower spinach, orachs, blite, the strawberry, spinach, cucumbers, and gourds.

Genus 3. *Of a compound sweet and bitter taste*, viz. the succory, the rampion, the borage, the saw-root, the young shoots of hops, the sowthistle, the hedge mustard, artichokes, capers, the brooklime, endive, and lettuce.

Genus 4. *Of a mildly sweetish and spicy taste*, viz. celery, angelica, shepherd's needle, fennel, and the common balm.

Genus 5. *Of an acrid taste*, viz. radishes, turnip radishes, horse radishes, tarragon, scurvy-grass, and rue.

Genus 6. *Of an acid taste*, viz. sorrel, purslanes, sour citrons, lemons, limes, cherries, plums, &c.

Genus 7. *Of a vinous quality*, viz. all sweet apples, particularly rennets, apples of Boston, and some few varieties from America, the pine apple, the honey or paradise apple, shadocks, or sena apples, bramble berries, strawberries, whortleberries, gooseberries, currants, grapes, apricots, peaches, and nectarines.

Genus 8. *Of a tart and astringent taste*, viz. all the wild-growing apples and pears, quinces, cranberries, whortleberries, barberries, the green summer and winter pears, sour apples, the fruit of the dog-rose or hip tree, medlars, the fruit of the service trees, sloes, or the fruit of the blackthorn, and the green Brasilian plums.

Order II. *Those of a gelatinous, watery consistence.* To this order belong all the various species of fish.

Division Second.

Alimentary substances, containing unwholesome fluids.

Order I.—Those of an acid nature.

1. *Coarsely viscous and saline substances*, viz. all salted and smoked animal food, both of quadrupeds and fish.

2. *Putrescent, or easily putrescible substances*, viz. the ram, the he-goat, the bull, the otter, waterfowl, the blood of animals, roasted eggs, tainted eggs, and lastly, all the flesh of wild and tame animals kept too long, to make it more tender and savoury.

3. *Substances of a furry and leathery appearance, or such as discover a suspicious acrimony*, viz. truffles, morels, and all kinds of mushrooms.

Order I.—*Those of gross fluids, or a coarse earthy consistence*, viz. the various leguminous seeds, such as dried peas, beans, lentils, and the like.

II. Drink.—(A.) Watery Liquors.

I. *Simple, or uncompounded*, viz. all kinds of common water.

II. *Mucous-watery.*—Spirituous.

1. All *fermented* liquors, known by the name of beer and ale.

2. *Spicy-balsamic liquids;* such as the vernal sap of the birch and ma-

ple, as well as the artificial preparations of tea, coffee, and chocolate.

3. *Sweetly acidulated*, viz. lemonade, orgeat, mead, must, cider, perry, &c.

(B.) Spirituous Liquors.

I. *Distilled.*—Namely, all kinds of ardent spirits, from whatever grain or vegetable substance they may be extracted.

II. *Fermented.*—All kinds of wine.

1. *Sweet wines*, those of Hungary, Spain, Italy, Greece, and the Cape; as likewise all wines made of currants, raisins, &c.

2. *Slightly acidulated wines*, among which Champagne, Rhenish wine, or old Hock, and that of the Moselle, are the principal.

3. *Acid and tart wines;* to which chiefly belong the wines of Franconia and Saxony.

4. *The acidulated sweet wines;* such as most of the French wines, and particularly Claret, and, lastly,

5. *The sharp and astringent wines;* the chief of which are the wines of Oporto and Burgundy.

III. Spices.

1. Of the *sweet* kind, such as sugar, honey, manna, and the inspissated sap of the maple and beech-tree.

2. Of the *acid* kind, namely the juice of citrons, lemons, unripe grapes, &c.

3. Of the *saline* kinds, namely, common salt, whether obtained in a solid form, or rock-salt, or from the evaporation of the sea, and salt springs—lastly,

4. Of the *pungent* and *balsamic* kind, such as garlic, shalot, onions, chives, nutmegs, mace, pepper, pimento, cubebs, vanilla, cardamoms, bay berries, juniper berries, ginger, calamus, cloves, cinnamon, saffron, carraway, coriander, fennel, parsley, dill, sage, marjorum, thyme, penny-royal, mugworts, hyssop, peppermint, and rue.

Amongst the alimentary substances intended for the use of man, few are employed in the same condition as they are presented by nature. They are for the most part prepared and disposed in such a manner as to be suitable for the action of the digestive organs. The preparations to which they are subjected are infinitely various, according to the sort of aliment, people, climate, customs, civilization—and fashion is not even without her presiding influence in the preparation of human food. In the hands of a skilful artist, alimentary substances almost entirely change their nature, form, consistence, smell, taste, colour, composition, &c.; in fine, every thing is diversified, that it is frequently impossible for the most delicate tastes to recognise the original materials of certain dishes, from the complete culinary metamorphosis they have undergone, from the magic tact of the master-kitchener.—See *Cookery*.

ALLSPICE. — Jamaica pepper, the produce of the *Myrtus pimenta*. This spice, which was first brought over for dietetic uses, has been long employed in the shops as a succedaneum to the more costly oriental aromatic: it is moderately warm, of an agreeable flavour, somewhat resembling that of a mixture of cloves, cinnamon, and nutmeg. — See *Pimento*, &c.

Sir Hans Sloane, in the Philosophical Transactions, (Abr. vol. xi. p. 667), says, "*Pimento*, the spice of Jamaica, or Allspice, so called from having a flavour composed, as it were, of cloves, cinnamon, nutmegs, and pepper, may deservedly be counted the best and most temperate, mild, and innocent of common spices, almost all of which it far surpasses, by promoting the digestion of meat, and moderately heating and strengthening the stomach, and doing those friendly offices to the bowels we generally expect from spices."

ALLSPICE, ESSENCE OF.—Oil of Pimento, one drachm, apothecaries' measure; strong spirit of wine, two ounces, to be mixed by degrees: used for mulling wine. A few drops will give the flavour of allspice to a pint of gravy, or mulled wine, or to make a bishop.—*Kitchener.*

ALLSPICE, TINCTURE OF.—Of allspice, bruised, three ounces, apothecaries' weight; brandy, a quart; let it steep for a fortnight, occasionally shaking it up; then pour off the clear liquor. It is a most grateful addition in all cases where allspice is used.

ALMONDS.—The common, or sweet almond, is the *Amydalus Communis,* Linn.; and the bitter almond is the *Amygdal. Amara,* L. Both grow to the height of twenty feet, with spreading branches. The leaves resemble those of the peach, but the lower serratures are glandular. This tree forms an important article in the general culture of many parts of France, Italy, and Spain. In a forward spring the blossoms often appear in February, but when this occurs, they are generally destroyed by the frost, and they bear little or no fruit; whereas, when the trees do not flower till March, they seldom fail to produce fruit in abundance.

The kernel of the stone is the only part used, which is tender and of a fine flavour. The sweet almond, and other varieties, are brought to the dessert in a green or imperfectly ripe, and also in a ripe or dried, state. They are much used in cookery, confectionary, perfumery, and medicine. —Professor Martyn observes, that "sweet almonds used in food are difficult of digestion, and afford very little nourishment, unless extremely well comminuted. As medicine they blunt acrimonious humour, and some times give instant relief in the heart-burn."

Almonds, walnuts, hazel nuts, and nuts in general, are extremely difficult of digestion, on account of the oil they contain, which readily turns acrid and rancid on the stomach, and occasions the heart-burn. Bilious individuals should by no means eat them; and there is nothing so absurd as to administer *almond milk,* as a common diet drink to febrile patients. This milk consists altogether of oily and almost insoluble parts, which heat and vitiate the stomach, stimulate the bile, and are easily decomposed from the water with which they are mixed. It quickly spoils; frequently, indeed, before it is introduced into the stomach: it is not in the least degree cooling, and its nourishing property is very improperly employed in fevers, and all those diseases which are attended with debility of the alimentary canal.

Almonds and nuts ought only to be eaten while fresh, and when the skin, which is extremely astringent and unwholesome, can be removed. They should be well chewed and eaten with salt; for every piece swallowed entire is indigestible, and the salt renders them miscible with our fluids as a saponaceous mass. If eaten in large quantities, they remain in the stomach, cannot be expelled by any medicine, and produce alarming, and sometimes fatal disorders. In general, they occasion difficult breathing, vomiting, and complaints in the bowels, which have been observed to be very common in those autumns that were productive of great quantities of nuts.

ALMONDS, OIL OF.—Used for forming emulsions in coughs, and other pulmonary complaints, by the intermedium of mucilage of gum arabic, or the yolk of an egg.

The analysis of sweet almonds, according to Boullay, is as follows:—

Oil	54
Albumen	24
Sugar (fluid)	6
Fibre	4
Gum	3
Pellicles	5
Water	3.5
Acetic and dross	.5
	100

ALMONDS, OIL OF BITTER.—This has all the characteristic effects of prussic acid, but it is so powerful and dangerous as to preclude its use. It is principally sold to perfumers and confectioners.

Vogel, in his experiments on and analysis of bitter almonds, gives the following proportions of the substances, in 100 parts:—

Peelings . . .	8.5
Fixed oil . . .	28
Albumen . . .	30
Sugar	6.5
Gum . . .	3
Parenchyma, vegetable,	5
Essential oil & prussic acid	..

The essential oil of bitter almonds appears to be a very singular substance. It is best obtained by distilling almond water with barytes, to separate the prussic acid. In close vessels it is very volatile; exposed to the air it becomes solid, crystalline, inodorous, and of considerable fixity. The crystals are a compound of it with oxygen, for oxygen is absorbed during their formation, and if they are dissolved in hydro-sulphuret of ammonia, they are again decomposed, and the original odour and oil are produced.—*Jour. of Science.*

Bitter almonds, when pounded and taken in sufficient quantity, are highly deleterious, as has been proved by numerous experiments.

ALMOND CUSTARDS.—Blanch and pound fine, with half a gill of rose-water, six ounces of sweet, and half an ounce of bitter almonds; boil a pint of milk, sweeten it with two ounces and a half of sugar, rub the almonds through a fine sieve, and, with a pint of cream, strain the milk to the yolks of eight eggs, and the whites of three well beaten; stir over a fire till it be of a good thickness; then take it off, and stir till it cools to prevent it from curdling. Baked in cups or in a dish, with a rim of puff.

AMBERGRIS.—A substance found floating on the surface of the sea near the coasts of India, Africa, and Brazil, supposed to be a concretion formed in the stomach of the spermaceti whale. It has usually been considered as a resinous principle; but its chief constituent is a substance very analogous to chlorestine, and to which MM. Pelletier and Caventon have given the name of *ambreine.*

As ambergris has not been found in any whales but such as are dead or sick, its production is generally supposed to be owing to disease, though it has been affirmed by some to be the cause of the morbid affection. It is found in various sizes, generally in small fragments, but sometimes so large as to weigh near 200 lbs. Its specific gravity ranges from 780 to 926. If good, it adheres like wax to the edge of the knife with which it is scraped, retains the impression of the teeth and nails, and emits a fat odoriferous liquid on being penetrated with a hot iron. It is generally brittle; but, on rubbing it with the nail, it becomes smooth like hard soap. Its colour is either white, black, or ash-coloured, yellow, or blackish; or it is variegated, namely, grey with black specks, or grey with yellow specks. Its smell is peculiar, and not easily counterfeited. According to Bouillon La Grange, who has given the last analysis, 3820 parts of ambergris consist of adipocire 2016 parts, a resinous substance 1167, benzoic acid 425, and coal 212.

An alcoholic solution of ambergris, added in minute quantity to lavender water, tooth powder, hair powder, wash balls, &c., communicates its peculiar fragrance. Its high price in London frequently causes it to be adulterated. It has occasionally been employed medicinally, but its use is mostly confined to the perfumer. Dr. Swediaur took thirty grains without any sensible effect. A sailor who took half an ounce of it found it an excellent purge.—*Ure's Chem. Dict.*

Ambergris being retailed at so high a price as a guinea per ounce, leads to many adulterations, consisting of various mixtures of benzoin, labdanum, meal, &c. scented with musk. The greasy appearance and smell which heated ambergris exhibits afford good estimates, joined to its solubility in hot ether and alcohol. An alcoholic solution of ambergris, added in minute quantity to lavender water, tooth powder, wash balls, &c. communicates its peculiar fragrance. The medical properties (at least those ascribed to it) of ambergris are stomachic, cordial, and antispasmodic. It is rarely used in this country.

AMBREINE.—A fatty substance obtained from ambergris, somewhat resembling chlorestine and adipocire.

AMBULATION.—Pedestrian exercise, or walking; the best for preserving health, and without a proper quantity of which health deteriorates.

AMIDINE.—A substance produced, according to Saussure, when the paste of starch is abandoned to itself, at the ordinary temperature, with or without the contact of air. See *Starch.*

AMNIOTIC ACID.—A peculiar acid said to be found in the liquor of the amnios of the cow.

AMPHIBIOUS.—Having the power of living both in air and water.

ANCHOVIES.—The anchovy is a small sea-fish, much used by way of sauce or seasoning. It is caught in the months of May, June, and July, in the Mediterranean, on the coasts of Catalonia in Spain, and the province of Provence, now forming the department of Vars and Lower Alps, and the mouth of the Rhone, in France; and particularly near the small island of Gorgona, in the Tuscan Sea, adjacent to Leghorn.

The following are the directions given to make sprats flavour like anchovies. After having well salted your sprats, let the salt drain from them; wipe them dry in the course of twenty-four hours, but do not wash them. Mix four ounces of common salt, an ounce of bay salt, an ounce of saltpetre, a quarter of an ounce of sal prunella, and half a tea-spoonful of cochineal, and reduce the whole to a fine powder. Let these be sprinkled among three quarts of the fish, and pack them in two stone jars. Keep them in a cold place, and cover them down with a bladder. These eat well on bread and butter, and will be found an excellent substitute for the genuine article.

ANCHOVIES, ESSENCE OF.—Take anchovies two pounds to four pounds and a half, pulp through a fine hair sieve, boil the bones with common salt, seven ounces in water six pints; strain, add flour seven ounces, and the pulp of the fish; boil, and pass the whole through a sieve; colour with bole to your fancy. These should produce one gallon.

2. Anchovies, five double barrels; bay salt, twenty-one pounds; brown salt, seven pounds; starch powder, three pounds; powdered bole, one pound; Cayenne pepper, eight ounces; water, twenty gallons—produces forty-two dozen and six pots.

3. Use pilchard sprats, which are richer than herring sprats; or herring liquor, from the white or pickled herrings.

In the selection of anchovies those are to be taken that are in the same state in which they came over in, not such as have been put to fresh pickle, mixed with red paint, which some add to improve the complexion of the fish. It has been said that others have a trick of putting anchovy liquor on pickled sprats; this may be easily discovered by washing one of them, and tasting the flesh of it, which in the fine anchovy is mellow, red, and high-flavoured, and the bone moist and oily. The fresher it is the better: hence as much as will soon be used ought only to be made. Those that are anchovies are of an opening nature, fortify the stomach, and provoke the appetite. Used in excess they heat much, and render the humours acerb and pungent. They contain much oil and volatile salt. They agree best in winter with old, phlegmatic, and melancholy people; and with those whose digestive organs are deranged or impaired. Young people of a hot and bilious constitution ought not to use them; and if they do, it should be very moderately. Those are to be be taken that are tender, fresh, and white without, small, plump, firm, and well tasted.

Accum, in his work on adulteration (p. 328) says, "Several samples which we examined of this fish-sauce, have been found contaminated with lead." Essence of anchovy is sometimes coloured with bole armeniach, Venice red, &c.; but all these additions deteriorate the flavour of the sauce, and the palate and stomach suffer for the gratification of the eye, which, in culinary matters, will never be indulged in by the sagacious *Gourmand* at the expense of either the one or the other. "If you are not contented with the natural colour break some lobsters' eggs into it, and you will not only heighten the complexion of your sauce, but improve its flavour. This is the only rouge we can recommend."—*Cook's Oracle*, p. 343.

ANIMAL.—An organised body endowed with life and voluntary motion, composed of certain elements, solid, liquid, gaseous, acid, and unconfineable, and of which all animal bodies are composed. *Of the solid elements*, are phosphorus, sulphur, carbon, iron, manganese, potassium, lime, soda, magnesia, silica, and alumina. *Of the liquid*, are muriatic acid; water, which here may be considered an element, enters into the organisation, and constitutes three-fourths of the bodies of animals. *Of the gaseous*, are oxygen, hydrogen, and azote. *The unconfinable* are caloric, light, electric, and magnetic fluids. These various elements, united with each other, three and three, four and four, &c., according to laws still unexplained, form what are called the proximate principles of animals.

The proximate materials or principles are divided into azotised, and such as are not azotised. The azotised are albumen, fibrine, gelatine, mucus, cheese-curd principle, urea, uric acid, osmazome, colouring matter of the blood. The latter are, the acetic, benzoin, lactic, formic, oxalic, rosacic acids; sugar of milk, sugar of diabetic urine, picromel, yellow colouring matter of bile and of other liquids or solids which turn yellow accidentally, the blistering principle of cantharides, spermaceti, biliary calculus, the odoriferous principle of ambergris, musk, castor, civet, &c., which are scarcely known, except from the property they possess of acting on the organs of smell. The materials or principles above-mentioned combine amongst themselves, and from their combination arise the organic elements, which are solid or liquid. The laws or forces that govern these combinations are entirely unknown.

ANIMAL FATS. See *Oils*, &c.—Animal fats are not immediate proximate principles. It is proved that human fat, and that of the pig, of the sheep, and other animals, are principally formed by two fatty bodies, *Stearine* and *Elaine* (which see), which present very different characters, that may be easily separated. Neither is the butter of the cow a simple body; it contains acetic acid, a yellow colouring principle, an odorous principle, which is very manifest in fermented cheese. Nor must adipocire be reckoned among these substances. (See *Adipocire*). Nor must this substance be confounded with spermaceti, and the biliary calculus, which are sometimes very different from each other. It does not contain a single principle analogous to them. See *Spermaceti.*

ANIMAL FOOD.—See *Aliments,* &c.

ANIMAL HEAT.—This phenomenon is thus explained. A body that is inert, and which does not change its position, being placed among other bodies very soon assumes the same temperature, on account of the tendency of caloric to equilibrium. The body of man is very different; surrounded by bodies hotter than itself it preserves its inferior temperature as long as life continues; being surrounded with bodies of a lower temperature it maintains its temperature more elevated. In the animal economy, then, there are two different and distinct properties, the one of producing heat, and the other of producing cold. Heat is produced by caloric, which appears to be its principle, at least its most evident source. Amongst other means instinctively employed to prevent or remedy coldness are, motion, as walking, running, and leaping, which accelerate the circulation; pressure, shocks upon the skin, which draw a great quantity of blood into the tissue of this membrane. Another equally effective means consists in diminishing the surface in contact with the bodies that deprive us of caloric. Thus we bend the different parts of the limbs upon each other, and we apply them forcibly to the trunk when the exterior temperature is low. Children and infirm persons frequently adopt this position when in bed. In this respect it would be very proper that young children should not be confined too much in their swathing clothes, to prevent them from resorting to this method. Our clothes preserve the heat of our bodies; for the substances of which they are formed being bad conductors of caloric, they prevent that of the body from passing off. Hence it appears that the combination of the oxygen of the air with the carbon of the blood is sufficient for the explanation of most of the phenomena presented by the production of animal heat; but there are several which, if real, could not be explained by this means. It has been remarked by authors worthy of credit, that in certain local diseases the temperature of the diseased place rises several degrees above that of the blood taken at the left auricle. If this be so, the continual renewal of the arterial blood is not enough to account for this increase of heat. The second source of heat must belong to the nutritive phenomena which take place in the diseased part. By means of these two sources of heat life can be maintained though the external temperature is very low, as that of winter in the countries near the Pole, which descends sometimes to —40° F. For the most part such an excessive cold is not supported without great difficulty; and it often happens that the parts most easily cooled are mortified: many of the military suffered from such accidents in the Russian campaigns. We, nevertheless, resist as easily a temperature much lower than our own; hence it is evident that we are possessed of the faculty of producing heat to a great degree. The faculty of producing cold, or, in other words, of resisting foreign heat, which has a tendency to enter our organs, is more confined. In the torrid zone it has happened that men have died suddenly when the temperature has approached 122° F.

According to a variety of facts and experiments, it appears that authors who have represented animal heat as fixed, have been very far from the truth. We have, indeed, few observations relative to the degree of temperature proper to the body of man; the latest are due to Edwards and Gentil. These authors observed, that the most suitable place for judging of the heat of the body is the arm-pit. They noticed nearly two degrees and a half of difference between the heat of a young man and that of a young girl; the heat of her hand was a little less than 97¼°, that of the young man 98.4°. The same person observed great differences of heat in the different temperatures. There are also diurnal variations. The temperature may vary two or three degrees in the course of the day.

ANIMAL JELLY.—The jelly of animals being the very substance which renovates the solid parts, it is obviously serviceable and necessary to nourish the human body. As, however, each kind of animal has its peculiar jelly and fat, which can be nourishing only when assimilated to our nature by the digestive organs, and as the different parts of animals require different degrees of digestion, we shall add the following details on this subject. Experience informs us that the flesh and intestines of young animals afford a thin, easily digestible, and nutritive jelly. Old animals, hard and tough flesh, cartilages, sinews, ligaments, membranes, membranous, thick intestines, and the sinewy parts of the legs produce a strong and viscid jelly, which is difficult to be digested, and assimilated to our fluids. The more healthy the animal is, the stronger will be the jelly, and the more nourishing its fluids. The most nutritious flesh is that of animals living in the open air, having much exercise and a copious mass of blood, and particularly if they are kept in warm dry places. The alkali contained in the flesh of carnivorous animals is the cause of the indifferent nourishment it affords, and of the injurious consequence attending its use. From the similarity in the structure of quadrupeds to that of man, it may be conjectured that their jelly is not unlike ours; that such as are fed upon milk give the best nourishment; and that the flesh of female animals is more easily digested, but less nutritious, than that of the castrated males, which in every respect deserves the preference. See *Gelatine,—Oils, Animal.*

ANIMAL LIFE.—The result of the *vis vitæ,* by which life is commenced and maintained. The fœtus in the womb is said to reach its animating point when it begins to act as a real animal, after the female that is enceinte with it has quickened. Physiologists are not agreed as to the time the fœtus becomes animated, or the female quickened. Some compute it at forty days after conception; others fix it at about the term of gestation.

ANIMAL OILS.—See *Oils.*

ANISEEDS.—The plant producing aniseeds is a native of Egypt, Crete, and Syria, from whence the seeds are brought. What grow in this country are good for nothing. They have an agreeable aromatic odour, and their taste is gratefully warm, with a degree of sweetness. They are carminative, in flatulency, indigestion, and the colick, particularly of infants. See *Carminatives.*

APPLES.—All apples contain more or less sugar, acid (*malic*), mucilage, soft woody fibre, and water; and, according as the one or other of these prevail, their qualities must be estimated. The aroma of apples, on which their flavour seems to depend, is probably a mild stimulant, which may assist digestion; and if this be correct, those which have the finest flavour will be most easily digested,—a circumstance which, in other cases, seldom happens. The different varieties, as the rennet, and some American sorts, may be mentioned as having this quality, while, at the same time, they contain a large proportion of sugar and mucilage, and are consequently nutritive. The dry, mealy, varieties, though not so much relished, are also highly nutritive. Pippins, and all the hard varieties, contain too much woody fibre, and mucilage of difficult solubility, to be easily digested. The watery sorts are generally crude, cold, and ill-adapted to weak stomachs, in the raw state. An apple undergoes considerable changes when subjected to the action of heat. Its digestible and nutritive qualities, indeed, are so much altered, that very coarse, acid, sour fruit is thus fitted for invalids. Nothing is more light than apple-pie, always excepting the crust, and the hurtful addition, so usually made, of stimulating spices, by way of seasoning what seems to require none. Towards Easter, when apples begin to dry, they should be put in tepid water for eight or ten hours, to swell. Ripe and sweet mealy apples will produce a laxative effect on the bowels, while those which are sour and astringent should be avoided by those of sedentary habits, as they are apt to induce costiveness, griping, and flatulency. This, says the *Almanach des Gourmands*, will be in a great measure prevented by drinking water and abstaining from wine. See *Cyder-Pears*.

A very wholesome and delicious confection is made of apples, called apple jelly; which is much used for its moistening, cooling, and pectoral properties.

Apples are used for pies, tarts, sauces, and the dessert. Duduit, (see *New Monthly Magazine*, June, 1821), has found that one-third of boiled apple pulp, baked with two-thirds of flour, and properly fermented with yeast for twelve hours, makes a very excellent bread, full of eyes, and extremely palatable and light. The fermented juice forms cider, a substitute both for wines and malt liquor. In confectionary they are used for comfits, compotes, marmalades, jellies, pastes, tarts, &c. In medicine, verjuice, or the juice of crabs, is used for sprains, and as an astringent and repellant: and, with a proper addition of sugar, Withering thinks a very grateful liquor might be made of it, little inferior to Rhenish wine. It is affirmed by Lightfoot that the crab mixed with cultivated apples, or even alone, if thoroughly ripe, will make a sound, masculine wine. When ripe, the apple is laxative; the juice is excellent in dysentery. Boiled or roasted apples fortify a weak stomach. Scopoli recovered of a weakness of the stomach and indigestion from using them; and they are equally efficacious in putrid and malignant fevers, with the juice of lemons or currants. In perfumery, the pulp of apples, beat up with lard, forms pomatum; and Bosc *(Nouveau Cours d'Agriculture, &c.)* says that the prolonged stratification of apples with elder flowers communicates to the former an odour of musk, extremely agreeable. In dying, the bark produces a yellow colour; and, in general economy, the wood of the tree is used for turning, and various purposes where hardness, compactness, and variegation of colour, are desirable objects.

To select a good Apple. For the table, those characterised by a firm juicy pulp, elevated poignant flavour, regular form, a beautiful colouring, are the best. Those for kitchen use are known by the property of falling, as it is termed, or forming in a general pulpy mass of equal consistency, when baked or boiled, and are of a large size.

Some sorts of apples have the property of falling when green, as the Keswick, Carlisle, Hawthornden, and other codlins; and some only after ripe, as the russet tribes. Such as have this property when green, are particularly valuable for affording sauces to geese early in the season, and for succeeding the gooseberry in tarts. For cider, an apple must possess a considerable degree of astringency, with or without firmness of pulp, or richness of juice. The best sorts, according to Knight, are often limp, dry, and fibrous ; and the Siberian Harvey, which he recommends as one of the very best cider apples, is unfit either for culinary purposes or the table. Knight found that the specific gravity of the juice of any apple recently expressed, indicates, with very considerable accuracy, the strength of the future cider. The apple, in fine, from the various uses to which it may be applied, is a fruit of more use and benefit to the public in general, than all the other fruits, the produce of this island, united.

The most common apples of herbaceous plants are the

Cucumber, Common prickly.
.. .. Small creeping.
.. .. Green Turkey.
.. .. Long prickly.
.. .. White prickly.
Gourd, Bottle.
.. Warted.
Melon, Egyptian.
.. Hairy skinned.
.. Green rinded.
.. Late small striated.
.. Musk.
.. Smooth green-fleshed.
.. Spanish.
.. Skinned netted.
.. Toy-shaped.
.. Water.
.. Yellow white.
Common Pompion.
Long Pompion.
Warted Cantaloupe.

Those of trees, are the

Crab apple.
Goa apple.
Oval fruited, Sapata.
Pear tree.
Pomegranate tree.
Quince tree.

Apples may be divided into the spicy, the acidulated, and the watery species. The first consists of the various kinds of rennet; they have the most delicate flavour, and are certainly the best; they do not contain a superfluity of water, and, from their vinous nature, are not apt to excite flatulency. Other kinds of apples, such as pippins, are too hard, consequently heavy to the stomach, though somewhat more nourishing than the former; stewed apples are easily digested and wholesome.

The kernels or seeds of apples are bitter and aromatic; nature seems to have intended these productions for correcting the watery and fermentable fluids of this and all other fruits, apricots excepted. Hence, the kernels of apples and pears, as well as those of plums and cherries ought to be eaten with the fruit, and not be thrown away as useless.—The butter in the paste of apple-pies may be considered as an useful addition, on account of its tendency to prevent fermentation, though the pastry itself always disagrees with weak and irritable stomachs.

Apples, are, in their general effects, similar to other fruit, and besides their aromatic virtues, are possessed of laxative properties. They are serviceable in diseases of the breast, to remove spasmodic contractions, to neutralize acrimony, and to attenuate viscid phlegm. With this intention, apples are most beneficial when eaten either roasted or boiled. The common people in Germany are so sensible of their excellent properties in inflammatory diseases, that they boil even the wild apples and drink the water. This preparation deserves to be imitated, especially when apples become scarce in the spring.

ARACK.—An Indian spirituous liquor, as the word imports, variously prepared, and frequently from rice; sometimes from sugar, fermented with the juice of cocoa nuts; frequently from toddy, the juice which flows from the cocoa-nut tree by incision; and from other substances. Its properties are similar to those of brandy and other spirits; but it is thought to be more heady, and does not agree so well with the stomach.

Mock Arack may be made as follows:—Dissolve two scruples of flowers of benjamin in a quart of good rum, and it immediately gives it the inviting fragrance of "Vauxhall Nectar."—*Cook's Oracle.*

ARDENT SPIRITS.—Spirits in a state of purity.

The various degrees of strength of spirits was technically denominated by numbers, referring to an arbitrary strength, called in the English laws, Proof Spirit, a gallon of which weighs seven pounds, eleven ounces, three drachms, avoirdupois.

When spirit is said to be one to three over proof, it is meant that one gallon of water added to three gallons of the spirit will reduce it to proof; and on the contrary, one in three under proof signifies, that in three gallons of that spirit there is contained one gallon of water, and the remaining two gallons are proof spirit.

As a gallon of water weighs by law, eight pounds, seven ounces, five drachms, avoirdupois, the specific gravity of proof spirit is to that of water as 910 to 1000. Of late, by a new regulation of the excise laws, the use of a hydrometer is introduced, which shews the number of hundred parts of spirit that any liquor contains above proof, or their deficiency below proof. But, by the use of certain substances, a fictitious strength is communicated, which it is not in the power of the hydrometer, constructed as it is, to detect.

In small quantities, ardent spirits are a powerful cordial and corroborant, raising the pulse, strengthening the stomach, promoting digestion, and preventing flatulence. Taken sparingly, and diluted with water, they supply the place of wine, and with some constitutions agree better, as they are not like wine disposed to acidity. The abuse of ardent spirits is productive of the same pernicious effects as those which arise from an excessive indulgence in wine, but in a greater degree. French brandy is the most bracing and stomachic; gin and rum the most diuretic and sudorific. Arack, which is distilled from rice, is more heating than the two last. Whiskey is considered as a lighter spirit than any of the former, from its containing less essential oil; it therefore agrees better with most stomachs. The qualities of all these several sorts of spirits are improved by long keeping.—See *Alcohol.*

Spirit and water do not, it is said, easily combine; and that much of the force of the former is blunted by intimate incorporation with the latter; and that when spirit is taken in a diluted state, the mixture should always be made *twelve hours* before it be used. However this may be, we do not concur in the necessity of restricting those who would indulge themselves moderately beyond the time present in the use of diluted spirits. Things may be too finely drawn; temperance is the best rule, and diluted liquors at all times are evidently more salutary than the spirit in a pure state. The fatal effects of dram-drinking have been vividly depicted by various writers; and the celebrated John Hunter, on dissecting a man who had been much addicted to the use of spirits, found the blood converted into an oily matter. And it has been proved by experiment, that the pernicious effects of ardent spirits upon horses are as great as those produced by giving them various well-known poisons. Spirits, nevertheless, may occasionally be employed medicinally as a stimulant or as a cordial, while the body has been exposed to the influence of cold and moisture; or under a state of exhaustion and a disposition to fainting; also, in some cases of putrid fever, where wine would not sit on the stomach. It is not our object to condemn every thing indiscriminately that is costly, rare, and good. There are certainly many liquors, particularly such as are distilled from the kernels of certain fruits, which, if taken in excess, might be attended with injurious, nay, dangerous consequences; but, on the contrary, there are others again devoid of narcotic substances, which, taken in moderation, are both agreeable and beneficial. A little weak brandy and water, as a diluent at meal-time, to those who prefer such a beverage, has nothing injurious in it; and certainly it is preferable to copious potations of malt liquors. And, from experience, after a hearty meal, a glass of soda-water combined, during the act of effervescence, with a table-spoonful or two of good cogniac, will not only promote the process of digestion, but cause the injesta to sit easy and comfortable, by relieving the distension occasioned by flatulence and debility of the organ. In these cases, then, where both wine and beer disagree with the stomach, producing acidity and other distressing symptoms, toast and water, or weak spirit, may be taken with advantage; or any other liquid substitute, modified to the existing state of feeling, would answer just as well, where there is no particular antipathy to any one in particular. It is with drinking as with eating; it is impossible to lay down rules for individual tastes and constitutions.

Ardent spirits comprise all those liquors obtained by fermenting vegetable, and particularly farinaceous substances, to a certain degree, and afterwards subjecting them to distillation. All distilled liquors consist of a great proportion of alcohol or pure spirit, a greater or less quantity of water, and generally of a very small proportion of empyreumatic oil, especially if distilled only once, or if this process be carried on too quickly. Pure spirits are perfectly free from this oil, which, from its burnt and acrid nature, is altogether indigestible. Proof spirits ought to consist of

Alcohol . .	55°
Distilled water . .	45°

But rectified spirits of wine ought to have five parts of water in the hundred: the specific gravity of the former being as 930, and that of the latter as 835, to 1000.

If spirits be distilled over peppermint, balm, aniseed, or carraway, their strength is not much increased; but if over cinnamon, cloves, mace, or other hot spices, they are rendered still more heating and pernicious to health. If drank in hot weather, or after violent perspirations, they check this function, by contracting the vessels of the skin, and closing the pores. On account of this contracting power they are sometimes of service to a person whose stomach is overloaded with beer or water, to assist their passage through the proper emunctories. After violent exercise and heat, a dram of spirits is more proper than cold water or beer, though a cup of tea, or other diluent drink, is preferable. After fat or strong food, spirits are exceedingly improper: for, instead of promoting the solution and digestion of food in the stomach, they rather tend to retard it. Of this we may be convinced, by attending to the effects they produce on inanimate substances: for these are preserved from putrefaction more effectually in spirits, than in any other liquid. Thus we may infer, that spirits will impede digestion, and render strong food taken into the stomach still more indigestible. Many persons are accustomed to take a dram as a remedy to flatulency: if the stomach be clean and undepraved they certainly will be relieved by it; but in the contrary case, their expectations will be disappointed.

To persons of relaxed fibres, distilled liquors may, under certain limitations be useful, as they increase the elasticity and compactness of the vessels. But to those whose fibres are already rigid, spirits are obviously pernicious, and have a tendency to bring on premature old age. They arrest the growth, and are otherwise improper for young persons. That they incrassate and coagulate the fluids, we may easily discover in those addicted to the use of them: they have a thick blood, are troubled with constant obstructions of the intestines, and their unavoidable consequences; such as a gradual depravation of the nervous system, loss of memory, mental debility, hypochondriasis, jaundice, dropsy, and at length consumption of the lungs. The throat and stomach of habitual tipplers are rendered callous, and at length almost closed, the glands are indurated, and consequently digestion is in the highest degree impaired.

Punch, a well known beverage, the composition of which requires no description, as it may be made of every kind of spiritous liquor, diluted with water, acid, and sugar. If a proper quantity of acid be used, it is an excellent antiseptic, and well calculated to supply the place of wine, in resisting putrefaction, especially if drunk cold, with plenty of sugar: it also promotes perspiration; but if drunk hot, and immoderately, it creates acidity in the stomach, weakens the nerves, and gives rise to complaints of the breast. After a heavy meal it is improper, as it may retard digestion, and injure the stomach; those troubled, therefore, with disorders of the chest, or piles, should use it sparingly, if at all.—See *Port Wine.*

Dr. Cheyne, in his "Essay on Long Life," published 1726, has the following passage in it, in which he gives his opinion of punch, which ought not to be omitted here. "Next to drams," says he, "no liquor deserves more to be stigmatized, and banished the repasts of the tender valetudinary, and students, than *punch.* 'T is a composition of such parts as not one of them is salutary or kindly to such constitutions, except the pure element in it." "I could never see any temptation, or any one in their senses, to indulge in this heathenish liquor, but that it makes its votaries the soonest drunk, holds them longest in the fit, and deprives them the most entirely of the use of their intellectual faculties and bodily organs, of any liquor whatsoever. It is likest opium in its nature, and in the manner of its operation, and nearest arsenic in its deleterious and poisonous qualities: so I leave it to them." There is little question that this opinion was the result of the Doctor's personal experience; and, when carried to excess, there are not many punch drinkers who might not, on reflection, allow the censure to be just.—See *Brandy, Rum, &c.*

ARECA.—The areca nut is the produce of a tree nearly resembling the cocoa in height and shape, except that its trunk is smaller, and its leaves shorter. From below these last there proceeds a long mass, which forms a bunch or parcel of fruit, like nuts or apricots; the flower is likewise mixed among the fruit. Two months after it has fallen off, the husks which envelope the fruit of the areca, begin to open and drop off. Then an oblong fruit appears, of the bulk of a prune, of a whitish and shining colour; its shell becomes firm, compact and reddish; the pulp which it contains is of a brown cast, bordering on red, soft and astringent to the taste; its nut resembles a nutmeg, and contains a white kernel. The Indians prepare the pulp or kernel of this fruit with the leaves of the betel, dividing a nut into eight or ten parts.—(See *Betel*). Charcoal of the areca nut is extensively used as a dentifrice.

ARNOTTA. — Principally employed in dyeing an elegant red colour; is prepared from the pellicles or pulp of the seeds of the Rixa, or Roucou, a tree common in the warm parts of South America. The wax, or pulp, in which the seeds are enclosed, is a cool, agreeable, rich cordial, and has been long in use among the Indians and Spaniards in America, who still mix it with their chocolate, both to heighten the flavour and raise the colour.

AROMA.—The odorous principle of plants and other substances. It was formerly called *spiritus rector*. Water charged with aroma, is called the distilled water of the substance made use of; for instance, lavender and peppermint waters, are water impregnated with the aroma of the lavender and peppermint.

AROMATIC.—Applied to any grateful scent, and of an agreeable pungent taste, as cinnamon, bark, cardamoms, &c.

ARRACK.—See *Arack*.

ARROW-ROOT.—The powder of the arrow-root is imported from the East-Indies. It appears to afford a larger proportion of nutritive mucilage than any vegetable hitherto discovered. It constitutes an excellent article of diet for weakly children, invalids, and convalescents.

ARTICHOKES.—These afford a light and tender food, perhaps still more nutritive, but less diuretic than asparagus; and for this reason they are preferable for culinary purposes. They are of a hot and dry nature. The heads slit in quarters and eaten raw, with oil, a little vinegar, salt and pepper, after dinner, are a grateful qualification to a glass of wine. When tender and small, they eat well fried crisp in fresh butter with parsley. In Italy they are sometimes boiled, and as the scaly leaves open, basted with fresh butter or sweet oil. The stalk is blanched in autumn, and the pith eaten raw or broiled. They are preserved fresh all winter, by separating the leaves after parboiling, allowing to every bottom a small earthen glazed pot, and smothering it as they do wild fowl, &c., with melted butter; or, if more than one, in a larger vessel, they may be laid layer upon layer, and treated in the same manner. They are also preserved by stringing them on packthread, and interposing a clean piece of paper between every bottom, to prevent them from touching one another, and hanging them in a dry place. They are likewise pickled.—"It is not many years," says Mr. Evelyn, "since this noble thistle came first to us from Italy, improved to its present magnitude by culture, and so rare in England, that they are commonly sold for five shillings a-piece." It may be further observed, that the stalks of the Spanish Cardoon, a wild and smaller species of the artichoke, with sharp pointed leaves and lesser head, is very tender, and being blanched, are served up without any condiments.—See *Asparagus—Skirrets*, &c.

ASPARAGIN.—A peculiar vegetable principle which spontaneously forms in the juice of the asparagus, that has been evaporated to the consistence of syrup.

ASPARAGUS.—An excellent article of nutriment, though somewhat flatulent and diuretic in its effects. The young shoots of this plant are not only the most palatable, but at the same time the most salutary. As a good substitute for it, the young buds of hops are recommended, which are more easily procured, scarcely inferior to the former in taste, and, on account of their aromatic quality, are very grateful and wholesome.—See *Vegetables, Introduction of—Artichoke—Skirret*.

ASSES MILK.—Nutritive and emollient in consumption, &c.

ASSES MILK, ARTIFICIAL.—Asses milk, not inferior in its properties to the natural, may be made by the following process:—Take of eryngo root or sea holly, and pearl barley, each half an ounce; liquorice root, three ounces; water, two pounds, one quart; boil it down over a gentle fire to one pint, then strain it, and add an equal quantity of new cow's milk. It is used as a diet in consumption, and other pectoral complaints.

B.

BACON.—Indurated fat of the hog, accumulated in the cellular texture under the skin, and is of all meat the most unwholesome; it easily turns rancid in the stomach, or it is so already by long hanging; and is particularly pernicious to those who are subject to the heart-burn.

Though coarse and heavy, bacon is nevertheless a nutritive food; and only fit to be consumed in great quantities by robust labouring people. Where it constitutes a principal part of the daily diet, it brings on disorders similar to those which arise from the immoderate use of pork. In consequence of the fat or lard with which it abounds, the flesh of the swine tribe is more or less laxative. The flesh of the sow is strong, and makes bad bacon. It is the flesh of the castrated animal that is in common use, and that is known by the name of pork. On account of the fat or lard, with which it abounds, it is not very easily digested. It is a very savoury food, and affords a strong nourishment, suited to persons who lead an active and laborious life. The too frequent and long continued use of this meat favours corpulency, produces fulness of the stomach and bowels, and occasions disorders of the skin.

BACON, TO PREPARE.—Cut off the hams and head of the hog; and if the animal be large, take out the chine, but leave in the spare ribs, as they will retain the gravy, and prevent the bacon from getting musty. Salt it with common salt, and a little saltpetre, and let it lie ten days on a table, to suffer all the brine to escape from it. Salt it again ten or twelve days, turning it every day after the second salting: then scrape it very clean; rub a little salt over it, and hang it up. Take care to scrape the white scum off it very clean, and rub on a little dry suet, which will keep the bacon from rusting. The dry salt will candy and shine it. Another method is as follows:—Take off all the inside fat of a side of pork, and lay it on a long board or dresser, that the blood may run from it. Rub it well on both sides with good salt, and let it lie a day. Then take a pint of very good salt, a quarter of a pound of salt petre, and beat them both very fine; two pounds of coarse sugar and a quarter of a peck of common salt. Lay your pork in something that will hold the pickle, and rub it well with the above ingredients. Lay the skinny side downwards, and baste it daily with the pickle for a fortnight. Then hang it on a wood smoke, and afterwards in a dry place, but not in a hot one. All bacon and hams should hang clear of each other, and of every thing around them; they should not even touch the wall.

Take care to wipe off the old salt before you put it into pickle, and never keep bacon or hams in a hot kitchen; or in a room exposed to the rays of the sun; as all these circumstances contribute not a little to make them rusty.

Westphalia Bacon.—Having chosen for the purpose a fine side of pork, make the following pickle.

Take—

Pump-water	1 gallon.
Bay salt	$\frac{1}{4}$ peck.
White salt	$\frac{1}{4}$ peck.
Saltpetre	1 pound.
Coarse sugar	1 pound.
Socho, tied up in a bag,	1 ounce.

Boil all these well together, and let

the liquor stand till it be cold. Then put in the pork, and let it remain in this pickle for a fortnight; then take it out and dry it over a saw-dust fire.—See *Hams*.

This pickle will answer very well for tongues; but in that case you must first let the tongues be six or eight hours in pump-water to deprive them of their sliminess; and when they have lain a proper time in the pickle, dry them in the same manner as you do your pork.—See *Drysalting*, *Hams*.

BACON HAMS.—See *Hams*.

BALM.—The tender leaves are used in composition with other herbs, in salads; and the sprigs, fresh gathered, and put into wine or other drinks, during the heat of summer, gives them a considerable degree of quickness. The dried herb, used as tea, is an excellent diluent in febrile diseases.

BARBEL.—A sea-fish of an oblong form, and middle sized, beset with large and tender scales. It rarely weighs above two pounds; it feeds on weeds, oysters, small fishes, &c.: it breeds three times. It is a little hard of digestion, in consequence of the gross juices it contains; at the same time these very juices make it extremely nourishing, and good durable food. It has a good taste, and was much esteemed by the Romans, which made them place it among those that brought an excessive price.

The liver of the barbel is the most esteemed part, for the exquisiteness of its taste, and the head next.

The small barbels are to be preferred to the large, as they are easier of digestion. They should also be taken in pure running waters. There are two sorts of barbel, the one hairy the other not. It agrees at all times with young bilious people, those who have a good stomach, and use much exercise.

BARLEY. — An annual plant, cultivated in almost every part of Europe.* The principal use of this well-known species of grain among us is for the making of beer; in order to which it is first malted. In Scotland, barley is a common ingredient in broths; and the consumption of it for that purpose is very considerable; barley-broth being as frequent a dish with the Scots, as soup with the French.

Pearl barley is barley freed from the husk by means of a mill. Malt is the entire seed, which has been fermented by watering it, and then killed by drying on a kiln. Barley-water is a decoction of the preceding, and is reputed soft and lubricating, of frequent use as a beverage in many disorders, and is recommended, with the addition of nitre, in slow fevers. The following are the directions laid down in the last edition of the 'London Pharmacopœia' for making the barley decoction, or, as it is usually called, *barley water*:—

Take—Pearl Barley . 2 ounces.
Water . . 4½ pints.

First wash away with cold water any foreign matter adhering to the barley; then, having poured upon it half a pint of the water, boil for a few minutes. Having thrown away this water, pour the rest, first made hot, upon the barley; then boil down to two pints and strain. For the compound decoction,

Take—

Of the decoction of barley	2 pints.
Figs, sliced . .	2 ounces.
Liquorice root, sliced and bruised .	1 ounce.
Raisins, stoned . .	2 ounces.
Water . . .	1 pint.

Boil down to two pints and strain. Taken freely for common drink, it is an useful diluent in many disorders. Its utility may be further promoted by the addition of gum-arabic, cream

* The native country of barley is uncertain. It has been said to be Tartary, Central Russia, Georgia, Northern India, and Sicily.

of tartar, a drachm of each to a pint of the decoction; sweetened with manna or sugar, as the state of the patient's bowels may require, it proves nutritive and aperient. This drink is also greatly improved by the addition of lemon-juice and sugar-candy.

BARLEY BREAD.—See *Bread.*

BARLEY BROTH. — *To make Scotch Barley Broth.*—Take a tea-cup-full of pearl barley, and one gallon of water; boil gently for half an hour; then add three pounds of lean beef, or neck of mutton, some carrots and turnips cut small, a pint of green peas, if in season, and some leeks. Let these boil gently for two hours longer in a close soup-kettle, after which the broth will be fit for use.

Barley-meal consists of the decorticated seed ground into a coarse flour. It has a greyish white colour, a peculiarly mawkish smell, and a mucilaginous taste. According to Fourcroy and Vauquelin, it contains starch, sugar, a little unctuous coagulable oil, an animal substance partly soluble in water, and partly forming glutenous flocculi; phosphate of lime and magnesia, silica, iron, and a little acetic acid. Proust has published a comparative analysis of raw and malted barley. He found in

	Resin.	Gum.	Sugar.	Gluten.	Starch.	Hordeine.		
Barley	1	4	5	3	32	55	=	100
Malt	1	15	15	1	56	12	=	100

It appears, consequently, that by the process of germination, gum, sugar, and starch, are formed at the expense of hordeine, a principle discovered in barley by Proust. It is obtained in the same way and along with the starch, which is removed by decoction with water, while the hordeine remains undissolved. It has thus great analogy with lignine, and is considered by Raspail to be nothing but the powder of the husk, which, considering its quantity, is not probable, although there is none of it found in pearl barley.—*Duncan's Disp.* p. 466.

Barley is one of our most valuable grains, and is used in a variety of ways. Entire, it is given as food to horses; and pearl barley and barley-meal are used by man, especially in northern countries. The former is eaten boiled until it is soft, either simply with some condiment, as salt, sugar, currants, cinnamon, or made into broth with meat, either alone or with other vegetables. The flour is used in the form of porridge and unleavened cakes. It cannot be made into bread, and is incapable of the panary fermentation, which is owing to the small proportion of gluten in its composition. It is probably for the same reason that it is less nutritious. On the other hand it has the advantage of having no tendency to induce constipation, so that some persons who are habitually costive derive great advantage from the use of barley-meal cakes and porridge. Hufeland (an eminent German physician), highly praises what he calls prepared barley-meal as a nutritious food, easy of digestion, and devoid of all stimulus, in atrophic diseases* and hectic fever. It is prepared by tying barley-meal up in a cloth, and boiling it till every thing soluble is removed. On the contrary, it is the soluble part that

* Emaciation, loss of strength, accompanied by hectic fever, the febrile symptoms of which are ushered in with a sense of chilliness, succeeded by increase of heat, accelerated pulse, followed by perspiration. From the beginning of the disease the body wastes; and in the advanced stage, the emaciation is very considerable. It is in almost every instance a symptomatic affection, that is, the consequence of some other disease, as the green sickness, king's evil, consumption, diseased viscera, abscess, &c.—See *New Lond. Med. Pharmaceut. and Posolog. Pocket Book*, p. 224.

is made use of in the decoction, or what is commonly termed barley water. The best British spirits are distilled from malt, although barley yields a larger product.

BASIL.—This herb, if not too strong, imparts a very grateful flavour, somewhat offensive to the eyes; and, therefore, the tender tops are to be used very sparingly in salad.

BEAN, BITTER. — The *Faba Amara*, or bitter bean, is the seed of an East India plant, which, though poisonous, has a sanctified name. It is *Ignatia Amara*, Saint Ignatius's bean, and is not only botanically, but naturally allied to the genus Strychnos. (See *Nux Vomica*). The bitter bean appears in many of the works that pretend to teach the art of brewing. It is a large pear-shaped berry, with seeds nearly an inch long, and extremely bitter. It is highly deleterious and intoxicating.

BEAN, ST. IGNATIUS'S.—See *Bean, Bitter*.

BEEF.—Beef is the flesh of black cattle, *i. e.* of an ox, bull, or cow, prepared for food. The flesh of the common bull has a strong disagreeable smell, and is dry, tough, and difficult of solution in the stomach. Bull-beef is rarely eaten. But the flesh of the ox, or castrated animal, called *ox-beef*, is a highly nourishing and wholesome food, readily digested by healthy persons, and constituting a principal part of the common diet of the inhabitants of this and many other countries. It is the most strengthening of all kinds of animal food.

Cow-beef is neither so tender, nourishing, nor so digestible as ox-beef. Beef affords, nevertheless, much good, animating, and strong nourishment; and no other food is equal to the flesh of a bullock of middle age. On account of its heating nature, where there is already an abundance of animal heat, persons of a violent temper, should eat it in moderation. It is peculiarly serviceable to hard-working men; and its fat is almost as easily digested as that of veal. It deserves, however, to be remarked, that the tongue, the intestines or tripe, and the sausages made of beef, are more difficult of digestion than the muscular part; and that it would be extremely improper to give them to nurses, children, or lying-in women. The meat of old bullocks, fed and kept in a stall when unfit for labour, is scarcely digestible; it is burthensome to the stomach, and, as well as that of old cows (which is still worse), contains no wholesome fluids. Though beef be more frequently eaten boiled, yet it is more nourishing and digestible when roasted. Lastly, beef is almost the only species of animal food with which the stomach is not easily surfeited, and which is in proper season throughout the whole year. — See *Butchers' Meat, to choose—Meat, to carve—Drysalting*, &c.

The most popular joint of beef is universally allowed to be the loin, which, on account of its having been once actually knighted, by Charles II. in a fit of royal condescension and jocularity, is now denominated SIR-*loin*. This ample joint has given rise to a well-known popular ballad, styled, "The Roast Beef of Old England;" and it still continues to make a conspicuous figure at the tables of all

"Who hospitably live,
And strangers with good cheer receive."

Two *sir-loins* joined together, without having the back-bone cut asunder, are called a "baron of beef." The author of the "Seasons" places the sir-loin at the head of his autumnal feast:—

"First the fuelled chimney blazes wide;
The tankards foam; and the strong table groans
Beneath the smoking *sir-loin*, stretched immense
From side to side, in which, with desperate knife,

They deep incision make, and talk the while
Of England's glory, ne'er to be defaced
While hence they borrow vigour.

Thomson.

BEEF, DUTCH.—To make Dutch beef, take a raw buttock, cut off the fat, rub the lean all over with brown sugar, aud let it lie two or three hours in a pan or tray, turning it two or three times. Then salt it with saltpetre and common salt, and let it lie a fortnight, turning it every day. Then roll it very straight in a coarse cloth, put it in a cheese-press a day and a night, and hang it to dry in a chimney. When you boil it put it in a cloth, and when it is cold it will cut like Dutch beef.

BEEF HAMS.—See *Hams.*

BEEF, HUNG.—To cure beef in this manner, make a strong brine with bay salt, saltpetre, and pump-water, and put into it a rib of beef for nine days. Then hang it up in a chimney where wood or sawdust is burnt. When it becomes a little dry wash the outside with blood, two or three times, to make it look black, and when it is dried enough boil it for use. Others cure their hung beef in the following manner: viz.

Take the navel piece, and hang it up in your cellar as long as it will keep good, and until it begins to be a little sappy. Then take it down and wash it in sugar and water, one piece after another, for it must be cut into three pieces. Then take a pound of saltpetre, and two pounds of baysalt dried and pounded small. Mix them with two or three spoonsful of brown sugar, and rub your beef with it in every place. Then strew a sufficient quantity of common salt all over it, and let the beef be close till the salt be dissolved, which will be in six or seven days. Then turn it every other day for a fortnight, and afterwards hang it up in a warm, but not a hot place. It may hang a fortnight in the kitchen, and when it is wanted for use, boil it in baysalt and pump-water till it be tender. It will keep, when boiled, two or three months, rubbing it with a greasy cloth, or putting it for two or three minutes into boiling water, to take off the mouldiness.

BEEF, JERKED.—In the West Indies, beef can scarcely be cured with pickles, but they easily preserve it by cutting it into thin slices, and dipping them in sea-water, and then drying them quickly in the sun; to which they give the name of *Jerked Beef.*

BEEF-TEA.—What is usually termed beef-tea is prepared by putting a pound of the lean part of beef, cut into very thin slices, into a quart of water, and boiling it over a quick fire for about five minutes, taking off the scum. The liquor is afterwards poured off clear for use. This makes a light and pleasant article of diet for weak and delicate people. On some occasions spice may be advantageously added to it. Gravy soup is very nourishing and heating. It is used as a clyster, as well as taken into the stomach, when it is rejected by the latter.

BEER.—Like ale, beer is a liquor which ought to consist purely of water, malt, and hops. It is, however, distinguished from ale, either by being older, stronger, or smaller; and, in proportion to the quantity, quality, and manner of compounding the ingredients of which it is composed, it has received different names, and is possessed of various degrees of salubrity. Old, or strong beer, is sometimes called by the cant word *stingo.* It is also designated by the term *October;* because that month is held to be peculiarly propitious to the brewing of this grateful beverage.

The more water there is used in brewing beer, the better it is calculated to quench thirst: but less so, if it contains a great proportion of the mucilaginous and saccharine principles of the grain. Strong beer, therefore, is very nourishing, and may be employed with advantage as a medicine, in weakly and emaciated habits, where port wine cannot be obtained. The greater or less addition of hops to the malt, furnishes us with a bitter or a sweet beer. The former kind is preferable as a medicine; the latter is more used as a common beverage; but it is apt to excite flatulency and diarrhœa. Hops, like other bitter substances—(See *Hops*), preserve beer in its vinous state, strengthen the stomach, and dissolve viscid phlegm. Beer made of a great proportion of hops, and a small quantity of malt, is a good beverage, and well calculated to allay thirst.—See *Ale*.

There are great varieties in beer, according to the degrees of fermentation; some kinds, such as those made of oats, in parts of Germany, which are scarcely allowed to ferment at all—(See *Mum*), are very cooling in summer, but soon spoil; others are only half fermented, such as the Dantzic spruce or black beer; others again to a sufficient degree, as our porter and ale; and, lastly, some are more than sufficiently fermented, such as Burton ale, and most of the strong home-brewed ales. All these are different in their effects, according to the various degrees of fermentation. Every kind of beer is inclined to ferment, on account of its constituent parts. If it be not properly fermented, this process takes place in the stomach; the fixed air, being disengaged within the body, distends the stomach and bowels, and occasions flatulency and looseness. But, when used in small quantities, it is not attended with any great inconvenience, particularly in summer and in hot climates. It is taken with great advantage at sea, against that enemy of the mariner, the scurvy.—Persons who have scorbutic gums, that are painful and bleed on the least touch, ought to drink half a pint of wort, or unfermented beer, every morning and evening, retaining the liquor for a good while in the mouth. Much benefit may be anticipated from this simple remedy.

Many consider beer or porter as excellent when it foams much, and makes what is termed the "cauliflower head" on the top of the vessel. But this froth, now-a-days, is by no means to be looked upon as an unequivocal test of quality, but rather of its imperfect fermentation, too often artificially increased by the addition of improper ingredients, as sulphate of iron, oil of vitriol, alum, &c. The volatile vapour or gas disengaged from such beer in the stomach and bowels, produces a quantity of stimulating and contracting air, by which the alimentary canal is almost at the same time expanded and astringed, so that the most dangerous spasms and colicks may be the consequence. Such beer likewise gives out a quantity of sulphureous vapours; and for this reason it is often hazardous to go into cellars where it is kept in a state of fermentation. A candle will often be extinguished by the vapour of such cellars, which is sometimes so noxious as to suffocate persons on their entrance.

If bottles, filled with beer, ale, or porter, are not soon enough corked, it turns flat or sour, acquires an unpleasant taste, and produces flatulency, colicks, and spasms. But if bottling and corking are done in proper time, the fixed air is not dissipated; its agreeably pungent taste is preserved; and it is then a very excellent and nourishing liquor, which quenches thirst, and does not, like wine, affect digestion. A person who has a good appetite, and takes nourishing food, requires no beer for its digestion, but by drinking it he is exposed to plethora, or a full habit, and all its concomitant complaints. Those, on the contrary, who take a great proportion of vegetable food, and have a weak stomach, will find a strong and bitter beer salutary. As every new sort of beer is not equally grateful to the stomach, it would be well to desist from the use of that kind to which we cannot habituate ourselves in the course of two or three weeks. On account of the great variety of this liquor we meet with in travelling, it is much better to drink no beer at all in journeys, and to use lemonade instead of it in hot weather; and wine or spirits mixed with water, when travelling during a cold and moist season.

Beer, in general, is nourishing, and has a tendency to fatten such individuals as are of dry and rigid fibres, and whose bile is good. Hence the inhabitants of countries in which beer is the principal beverage, are commonly more phlegmatic and indolent than the same class of people in wine countries. Many kinds of beer, however, in which a greater than usual proportion of grain is used, contain much spirit, and are of a heating and inebriating nature: such, for instance, is our Burton ale, the Edinburgh ales, and several others, and all the strong kinds of foreign beer. Light and well fermented beer is a wholesome, and, at the same time, a diluent species of nourishment. Persons already of a plethoric habit, or disposed to become corpulent, should use the lightest beer, as it generally agrees best with them. Thick and nourishing beer is of service to wet-nurses, and weakly constitutions. Sweet beers are only nourishing; but the better kinds are strengthening also. The latter are beneficial in a weak state of digestion, and to people troubled with acid in the stomach; yet sweet beer is more wholesome for daily use, and at the same time less exposed to dangerous adulterations. In fine, beer is not a fit drink for people of a thick, black, bilious blood, and with a disposition to melancholy: it is the most useful species of drink to the weak, the lean, and the laborious, provided they are not very subject to flatulence, nor troubled with diseases of the chest. In both of these cases it has been found to disagree, and to be much inferior in salubrity to wholesome water. See *Malt Liquors—Ale—Porter*.

BENNET, THE HERB.—The common Avens (*Geum urbanum*) or herb bennet, is highly extolled all over the continent, for its medicinal, as well as other valuable properties. Hence it was, perhaps, that it acquired the surname of Bennet, or *benet*, contracted from *benedictus*, although the origin is now ascribed to a saint of that name. The roots of this plant, particularly when it grows on a dry, sandy soil, have a pleasant odour (similar to that of cloves), which it readily imparts to any spirituous menstruum. On this account it is highly valued by the brewers, and is said to be a permanent ingredient in the *Augsburg beer*, which is so famous throughout Germany. The dried roots are sliced, and enclosed in a thin linen bag, which is suspended in the store vat, or cask; and, with what truth we know not, it is asserted, that the beer so managed never becomes acid.

BETEL.—A plant which creeps along the ground like pease or hops, whose stalk is very weak, so that it must be supported by a prop, or planted near the areca tree, to which it attaches itself like ivy. Its leaf resembles that of the citron tree, though a little longer; its stalks or fibres are also stronger, and it becomes reddish when dried. It thrives best in watery places, such as the banks of the sea or rivers. There it bears a fruit shaped like a rat's tail, but produces none in climates too hot or too cold. An Indian is scarcely ever seen without betel in his mouth. As soon as any one goes into a house on business, or to make a visit, it is brought and presented to the company by way of compliment; it is used even before their kings. When foreign ambassadors are admitted to an audience of the king, he is usually found sitting cross-legged on the ground on a carpet, having an officer in waiting, who holds his betel, which he chews continually, throwing out the husks and the spittle it produces. The greatest honour he can do them is to invite them to taste his betel. The Indians say it fastens the gums, preserves the teeth, makes the breath sweet, is good for the stomach, promotes digestion, prevents wind and vomiting, to which they are very subject; and, lastly, prevents the scurvy. Notwithstanding all these real or imaginary properties, there are few Europeans who can accustom themselves to it. To many it occasions sickness, and others it perfectly intoxicates, although that sensation does not last long.—See *Areca.*

BEET-ROOT.—This root contains a large proportion of saccharine matter. By some experiments made at Berlin by M. Achard, it was proved, that about fourteen pounds' weight produced one pound of raw sugar, exceedingly sweet, and without an intermixture of any other taste. Independent of this consideration, the beet is a valuable root, both in an economical and culinary point of view. It possesses mild aperient properties, and ought to be more frequently eaten, for supper, by those of costive habits. Although it is not hard to digest, yet some less flatulent root, such as parsley, celery, or even potatoes, ought to be used together with the beet—an addition which will render it not only more palatable, but also better adapted to the stomach and bowels. The beet is extensively employed abroad for the purpose of obtaining sugar, which it produces superior to either East or West India sugar in colour, though deficient in specific strength.

The endeavours that were made in France, during the war, to procure sugar from the beet-root in sufficient quantity to satisfy the demands of the population, were very successful, and it was procured of excellent quality. The peace, however, by re-opening the ports, and allowing the introduction of the cane sugar, tended to paralyse that branch of agricultural industry, for which, however, some strong exertions have been made by the philosophers of France. The following is given as the statement of the expense and returns of the manufactory of M. Chaptal; and if there are no unstated objections to its introduction, it is difficult to account for the preference given to cane sugar. Forty-five French acres were sown with beet-root, and the produce equalled 700,000 lbs.

CHARGES.	FRANCS.
Sowing, pulling, carriage, and expense of the manufactory	7,000
Workmen	2,075
Fuel	4,500
Animal charcoal	1,100
Repairs, interest of capital, &c.	4,000
Francs	18,675

PRODUCE.	lbs.
Rough sugar of the first crystallization . . .	29,132
Sugar obtained by further processes from the molasses	10,960
Total of rough sugar . .	40,092

Besides which there were 158,000 lbs. of refuse, which was excellent food for cattle, and a large quantity of exhausted molasses, which might be converted into spirit.

BILE.—A yellow, intensely bitter fluid, secreted from the blood in the liver, collected in the gall-bladder, and discharged into the lower end of the duodenum by means of the common choledoch duct which opens there. It is of the greatest importance in the preservation of health, and for remedying most of the inconveniences to which the human constitutioin is liable. By its saponaceous qualities, it sheaths or neutralizes the acidity of the chyle, contributes to the work of digestion, and the mixture of the internal fluids; and being found in most, if not in all animals, we may safely conclude, that the wise Architect of the universe has created it both for necessary and noble uses.

The experiments of Tredman and Gmelin, whose recent experiments are much more elaborate and precise than those of MM. Leuret and Lassaigne, ascribe to the bile the following uses: 1st, By its stimulant properties it excites the flow of the internal fluids, as is proved by the unusual dryness of the fæces in jaundiced persons, and in animals whose common bile duct has been tied. 2nd, It probably stimulates the intestinal muscular fibres to action. 3rd, As it contains an abundance of azotized principles, it may contribute to animalize those articles of food which contain no azote in their composition. 4th, It tends to prevent the putrefaction of the food during its course through the intestines: because when it is prevented from flowing into them, their contents are much farther advanced in decay than in the healthy state. 5th, It probably tends to liquefy and render soluble the fatty part of the food. Lastly, it is to be regarded as an important secretion. The only use of the bile, in chylification, is restricted by these two celebrated physiologists, to that of accomplishing the solution of fatty substances.

The direct and obvious use of the liver is the secretion of bile, which, in most animals, is suffered to accumulate in a pear-shaped reservoir, called the gall-bladder; yet in many animals, even of different classes, no such reservoir is perceived, as in the elephant, rhinoceros, stag, camel, goat, horse, trichecus, porpoise, rat, ostrich, and parrot: while we do not know of a reptile that is without it. It may, however, be observed, that a gall-bladder is common to all carnivorous animals possessing a liver, and that it seems to be only wanting in those that feed on vegetables alone. Yet, while we witness this distinction, we are ignorant of the cause, and incapable of applying it. In the human subject the gall bladder has sometimes also been wanting, (*Olivier, note sur l'atrophie de la vessicule biliare, in Archiv.! Gen. de Med. tom.* v. *p.* 196) of which Dr. Cholmley gives an example (*Med. Trans. vol.* vi. *art.* iv.:) but such a deficiency has most occurred in infants who have perished soon after birth; before which period, as there is no transit of fæces through the intestinal canal, and perhaps no peristaltic action, it does not appear to be necessary. And, indeed, it is probable, that previous to birth no bile is secreted.

According to Meckel, (*Manuel d'Anat. tom.* iii. *p.* 468), the want of a gall-bladder does not always dangerously impair health; and a case in which a person thus born having reached the adult state is recorded. (*Mém. de Méd. Militaire, tom.* xx. *p.* 406). There are two kinds of bile, distinguished into the hepatic and cystic. The former, or that secreted in the hepatic duct, is mild and sweet; the cystic, or that formed in the gall bladder, is pungent and bitter; whence it might be inferred that it is the gall-bladder that secretes the bitter principle. Yet, in children, the bile contained in the gall-bladder is as sweet as that in the hepatic duct; and in various insects, as the larvæ of the *cynips querci*, or gall-fly, and the *curculio nucis*, or nut-weevil, a bile, powerfully bitter, is secreted without either gall-bladder or liver. Upon what principle are such discrepancies to be accounted for? Yet, whatever be the use of the bile, or the office of the liver, it is known that the general symptoms of jaundice depend upon an obstruction of the flow of the bile into the alvine canal, and its retrograde passage into the blood.

BIRDS, FLESH OF, CONSIDERED AS FOOD.—Every part of a bird, as well as its eggs, may safely be taken as food. A singular instance is mentioned by Gmelin, of some people having been much affected after feasting upon larks, the flesh of which he suspects might have been rendered poisonous from having fed upon hemlock seed, which they eat with impunity; there can however be no doubt that this supposition is a mistake, as larks, it is well known, are a common and favourite bird in the very country where this accident is said to have happened.

There is a considerable difference in the essential properties of birds, not only of different kinds, but even in the different muscles of the same bird. The pectoral muscles which move the wings, are whiter, drier, and more tender, than those which move the legs. The tendons of the legs are also very strong, and at a certain age become bony; but the flesh of the legs, when sufficiently tender, either from the bird being young, or from long keeping, or sufficient cooking, is more juicy and savoury than that of the wings. Of a few birds, especially the woodcock and snipe, the legs are at all times preferred to the breast. In the blackcock, the outer layer of the pectoral muscles is of a dark brown colour, while the inner layers are white; a similar difference is observed in many other birds, and perhaps, in a slight degree, it is general.

The muscular organs of birds differ from those of quadrupeds, in their flesh never being marbled, or having fat mixed with the muscular fibres. In the flesh of different species of birds, there is a considerable diversity; but no very accurate distribution of them in this respect can be made, as they run insensibly into each other, notwithstanding the extremes are sufficiently distinct. The following however may be noticed as well enough marked:—

1. *The white-fleshed,* exemplified in the common Fowl and Turkey.

2. *Dark-fleshed game,* as Grouse, Black-cocks, &c.

3. *Aquatic;* Goose, Ducks, &c.

4. *Rapacious;* Hawks and Owls.

Several species of the first and third classes are domesticated, and reared in great numbers, for, as termed, articles of food.

The white-fleshed birds are very generally liked, when good of their kind, and by many are preferred to game, which, however, when sufficiently kept, constitutes one of the proudest luxuries of the Gourmand's table; it has then acquired a peculiar odour, called *fumet,* and an aromatic bitter taste, most appreciable in the back.

The aquatic birds, both swimmers and waders, are generally eaten, and many of them are very delicate, though in general they are disposed to become very fat, often acquiring a rancid and fishy taste, which, however, is chiefly attached to the fat, and may be somewhat avoided by skinning the bird, and removing the inside layer of fat before cooking. None of the rapacious class of birds is eaten, partly perhaps from prejudice, and principally, no doubt, from the cadaverous smell acquired by those which prey on carrion.

The muscular fibre is coarser in the large than in the smaller birds of the same class; and it becomes less tender as they get older. It is also considerably influenced by sex; although the young cock of some birds is preferred, chiefly, it is conceived, on account of its greater size, and more handsome appearance. By removing the sexual organs at an early age, both sexes are much improved for the use of the table, becoming thereby larger, fatter, and more tender, as may be witnessed in the capon and poulard.

In all ages epicures have been exceedingly capricious in the selection of certain parts of birds, and the ancients much more so than the moderns; for, although we prize the combs of the common fowls, the trail of the woodcock, and even collect the dung with care that falls from it in roasting, the guts of the buzzard, the gizzard and liver of the goose, and the feet of the duck; we find that the Roman gourmands delighted in the brains of ostriches and parrots, the tongue of the flamingo, and the enlarged liver of the goose: the last mentioned still continues to be in great request among our continental neighbours, and the providing of them is another considerable branch of rural economy in some provinces. This, it is said, is effected at Strasburg, by actually sewing up the anus of the tortured animal after a certain preparation; but we have not hitherto met with the details of this species of barbarity recorded in print,* and in all probability it may not be true; otherwise so striking an exemplification of Sir Everard Home's doctrine, that the fatness of animals depended upon the length of their intestinal canal, and the length of time the fæces were retained in it, would not have escaped his consideration.

BIRDS, when in Season.—Each kind of bird used at the table is considered to be in season at certain months of the year, determined by the time of breeding, the abundance of food, or their migration. Some birds do not remain with us all the year, and therefore are more valuable when they can be procured. The birds which migrate, go further south in winter, and further north in summer. They are with us consequently in winter, or summer, according to their habits in regard to temperature, and the supply of food. The birds which remain with us during summer, breed, and their young may be obtained before they fly, and while they are still delicate, as the gannet or soland goose; others, as the woodcock, rarely breed in this country, and are only to be procured in an adult state.

As regards the mode of killing birds for the use of the table, there is indeed very little diversity. Game is for the most part, killed with the gun, now that hawking is out of fashion, although birds formerly killed in this way were more esteemed, in consequence of their flesh becoming sooner tender. Larks are caught in winter in traps, and then killed; they are also shot when the snow is on the ground. The heads are twisted off young pigeons, but domestic fowls are generally killed in a very barbarous manner. The common fowl has its neck drawn, by which the spine is torn asunder at an uncertain place, and if the spinal cord be not divided, or be divided too low, the animal dies slowly, and sometimes is alive after its feathers have been plucked off. The large blood vessels are also sometimes torn across; this, however, is an advantage, from its shortening the sufferings of the animal, and rendering its flesh whiter, in consequence of the blood lost.

By dividing the vessels under the tongue, turkeys are blooded to death; the only objection to this method is, that it is tedious, as in all probabi-

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* In an old work, called "*The Complete Cook*," published in 1668, we meet with the following directions:—

"To make chickens fat in four or five days!

"Take a pint of French wheat, and a pint of wheat flour, half a pound of sugar, make it up into a stiff paste, and roll it into little rolls, wet them in warm milk, and so cram them that they may be fat in four or five days; if you please you may *sew them up behind*, one or two of the last days." This is pretty near the mark.

lity it is unattended with much pain. Geese are killed by splitting their sculls with a knife; this is sometimes so very awkwardly performed, that neither are any large vessels divided, nor the nervous energy destroyed. Domestic birds are generally kept confined, and fed upon choice food, for some time previous to killing them, and sometimes they are crammed and forced to eat more than they would were they left to themselves. At the last they should always be kept a day without food, that their crops may be empty, as food left in them is apt to give a taint to the flesh.

BIRDS, used as Food.—Among the different orders of birds used as food, may be enumerated the following:—

1. *Of the Goose tribe.* (Order *Anseres*). The principal species of this order that are eaten, belong to the genus *Anas*, of which all the species may be used as food, but the following are most generally employed, viz.:—

Black-backed gull.
Brent Goose.
Goose.
Muscovy Duck.
Poachard.
Puffin.
Razor-bill.
Soland Goose.
Teal.
Tame, or common Duck.
Tame Swan.
Tufted Duck.
Widgeon.
Wild Duck.
Wild Swan.

Of these the swan, the goose, the widgeon, the teal, the wild and tame duck, are the most digestible. The barnacle, the puffin, the soland goose, and the black-backed gull, are very fat, heavy, and have generally a fishy taste.

Order Picæ.

Of this order two species only are generally used as food.

1. *The Rook.*—The young of this bird is very similar to the pigeon, but is rather inferior in flavour and digestibility.

2. *The Green Wood-pecker.*—The flesh of this and some other species, is palatable, but of difficult solution.

Order Grallæ.

Most of the genera of this order furnish very good and savoury food. The following are commonly eaten:

Brown Gallinute.
Common Water Hen.
Dotterell.
Great Plover, or Green Shank.
Green Plover.
Grey Plover, or Sand Piper.
Lapwing, or Bastard Plover.
Long-legged Plover.
Purple Water Hen.
Purre.
Red Godwit.
Ruff and Reeve.
Snipe.
Spotted Snipe.
Stone Plover.
Thick-kneed Bustard.
Woodcock.

Many of the above order are highly savoury and delicious, forming, under the direction of the principal officer of the culinary department, some exquisite bonne-bouches for the dainty gourmand.

Order Gallinæ.

It is from this order we are supplied with the principal part of the food derived from birds. The following species afford excellent nourishment, viz.:—

Black Cock, or Black Game.
Common Fowl.
Common Partridge.
Crested Curassao.
Guinea Hen.
Peacock.
Pheasant.
Quail.
Quhan.
Red Game.
Turkey.
Wood Grouse.

ORDER PASSERES.

Of this order the following species are employed as food:—

Blackbird.
Brambling, or Bramblefinch.
Bunting.
Chaffinch.
Common Pigeon.
Epicurean Warbler.
Esculent Swallow.
Field-fare.
Greenfinch.
Grosbeak, or Hawkfinch.
Hedge Sparrow.
House Sparrow.
Lark, all the species.
Misletoe Thrush.
Redstart.
Redtail.
Ringdove.
Sheld Apple, or Cropbill.
Stone Bunting.
Stonechat.
Tree Sparrow.
Wheatear.
Whinchat.
Yellow-hammer.

BITTERS.—Herbs, or their extracts, containing a bitter principle—as HOPS, QUASSIA, VALERIAN, &c.—Which See.

The use of bitters followed the advice of the physician, who, anciently, being an herbalist, recommended the plants that grew in his garden. Each plant had its particular disease which it was able to combat; and hence the whole science of medical botany. According to the ancient, and many still of the modern, physicians, the bitter principle was peculiarly efficacious; it is a pure tonic, increases the appetite, promotes digestion, gives vigour to the system, &c. Bitters, however, are either different in the essence, or they are never pure. A few, such as gentian and quassia, are comparatively inactive. Some, like aloes and marsh trefoil, are purgative. Hops are astringent and narcotic: broom, and some others, are diuretic; while many, as opium, ignatia amara, tobacco, and nux-vomica, are highly deleterious; yet we find that each of those mentioned, and others not named, have been boiled among the worts of beer, without regard to the effect on particular constitutions, or to the general safety of the individuals for whom the liquor is brewed.

As substitutes for the hop, broom, wormwood, and several other bitters, have greatly fallen into disuse; for, since the flavour of the hop has been so generally recognised, no bitter which is inconsistent with that flavour would be relished. Bitters that are perfectly, or at least nearly, flavourless, may, indeed, be added to hops when the bitter principle only is required; and this is the case with porter, in which flavour is little studied; for the hops usually employed in brewing that beverage are either coarse or old, and would not be admissible in fine ales. The cocculus indicus, so frequently introduced into the latter, has a taste by no means agreeable; but its intoxicating quality is all that is wanted by the brewer, and, could that be procured (as has been attempted in a separate condition), its flavour would be willingly dispensed with. The bitter contained in porter is very great, and if taken wholly from hops must require an average quantity of ten or twelve pounds to the quarter of malt, or about three pounds per barrel. The fluctuation in the price of this article is so extreme, that the wonder ceases why substitutes, under such circumstances, should have been so eagerly sought after. If the substitutes were not more noxious than the principle (and some of them were less so), the conscience of the brewer was easily satisfied; especially when he sees that he could procure as much bitter for sixpence, as would otherwise have cost him twenty shillings.

The following ingredients are accounted excellent stomachic bitters, strengthening the digestive organs, creating an appetite, and giving a degree of energy to the relaxed muscular fibre.

Take—

1. Gentian root . . ½ ounce.
   Peruvian bark . 1 ounce.
   Orange peel, dried 2 drachms.
   Cinnamon . . 1 drachm.

These are enough for two bottles of white wine, in which they should be left to macerate for fourteen days.

Take—

2. Gentian root . . 2 ounces.
   Orange peel, dried 1 ounce.
   Smaller cardamoms ½ ounce.

For a quart of brandy; treated as above.

Take—

3. Gentian root . . 1½ ounce.
   Orange peel, dried 2 drachms.
   Fresh lemon peel ½ ounce.

For a pint and a half of boiling water. Let the infusion cool, then strain, and add a pint of brandy. In the morning or forenoon a wine glassful will be found a grateful solace to a stomach debilitated from excess of any kind.

BITTER BALLS.—Used by the brewers to supply the deficiency of the hop; composed as follows:—Gentian root, 8lbs.; extract of gentian, 4lbs.; treacle, q. s. rolled up in balls.

BITTERN.—A composition containing—extract of cocculus indicus; extract of quassia; Spanish liquorice; calcined sulphate of iron (green copperas, called also salt of steel). Sold in large casks to brewers, who send it out to the licensed victuallers as "finings;" an ingredient by which they not only fine their beer, to the prejudice of the public health, but very frequently, and justly so, get *fined* themselves for it.—See *Cocculus Indicus*; *Sulphate of Iron*, *&c.*

BLACKBIRDS.—The blackbird has many things in common with the thrush; still they are neither so common nor so easy of digestion; they may, however, be reckoned among those foods that produce a good juice. A blackbird intended for the table, ought to be young, tender, and well fed. In this condition it produces good juice, is nourishing enough, and easily digested. It produces no ill effects unless eaten to excess. The older they grow and the less fat they are, deteriorates their qualities. It agrees at all times, with any age and constitution.

BLACK EXTRACT. *Hard Multum.*—Made from cocculus indicus, by decoction in water, and evaporation, to a stiff tenacious mass: its properties are narcotic, intoxicating, and deleterious: principally used by ale brewers.

BLITE.—Commonly called English mercury, or all-good. The tender tops may be eaten as asparagus.

BLOOD.—The blood of animals procures but a coarse and indifferent nourishment: the blood of some animals, however, is better than that of others. The blood of an ox or cow is used in making sausages and black-puddings; yet in most places it is entirely rejected. Hogs' blood is now in greatest request, as being the sweetest and most palatable. Some fat of the same beast mixed with the puddings made of it, into which salt, pepper, and sweet herbs are introduced, greatly correct and improve it.

BOILING.—The process of raising the temperature of water, by means of fire and fuel, to 212½ of Fahrenheit's thermometer.

In boiling any kind of meat, but particularly veal, much care and nicety are requisite. Fill the pot with a sufficient quantity of soft water, dust your veal well with fine flour, put it into the pot destined for its reception, and set it over a large fire. It is the custom of some people to put in milk to make it white; but this is of little use, and perhaps had better be omitted, for if you use hard water it will curdle the milk, give to the veal a brownish-yellow cast, and will often hang in lumps about it. Oatmeal will do the same thing; but by dusting your veal and putting it into the water when cold, it will prevent the foulness of the water from hanging about it. Take the scum off clean as soon as it begins to rise, and cover up the pot closely. Let the meat boil as slowly as possible, put in plenty of water, which will make the veal rise and look plump. A cook cannot commit a greater mistake, than to let any sort of meat boil fast, since it hardens the outside before it is warm within, and contributes to discolour it: thus a large leg of veal, of twelve pounds' weight, will take three hours and a half boiling, and the slower it boils the whiter and plumper it will be.

When mutton or beef is the object of cookery, be careful to dredge them well with flour before they are put into the pot of cold water, and keep it covered; but do not forget to take off the scum as soon as it rises. Mutton and beef do not require so much boiling, nor is it much minded if it be a little under the mark; but lamb, pork, and veal, should be well boiled, as they will otherwise be unwholesome. A leg of pork will take half an hour more boiling than a leg of veal of the same weight; but in general, when you boil beef or mutton, you may allow an hour for every four pounds weight. To boil a leg of lamb of about four pounds weight, you must allow an hour and a half. Boiling in a well-floured cloth will make meat white. The cloths kept for this purpose should be boiled after each using in clean water, nor should they be suffered to hang in damp places, which would be the means of communicating a damp flavour to the meat. The same observation stands good as regards tapes, pudding-strings, and cloths. To put the meat in when the water is cold, is allowed to be the best method, as it thereby gets warm through, gradually, before the outside becomes hard. Be careful to skim the pot the moment it boils, otherwise the scum will be dispersed over the meat. The more soups and broths are skimmed the clearer they will be. Remember that meats boiled quick will be hard. Vegetables ought never to be boiled, with the exception of carrots and parsnips, with meat.

For boiling and roasting, the length of time ought to be determined by the bulk and solidity of the joint, the strength of the fire, &c.; the time must be reckoned from the instant the water just commences boiling, and however fiercely it boils, the water remains at the same pitch of temperature. Meats become more tender, consequently more easy of digestion, as well as better flavoured, by hanging; but veal and lamb will not bear it so long as the flesh of older animals, and fresh-killed meat will take much longer time to boil than that which has been kept till it is what the butchers call ripe. It will also keep longer in cold than in warm weather: if it be frozen it must be thawed before boiling, as well as before roasting; if it be fresh killed it will be tough and hard, stew it ever so long or ever so gently. In cold weather, the night before you dress it, remove it to a place where the temperature is not less than 45° of Fahrenheit's thermometer. If beef or poultry be suffered to remain in the water after they are done enough, they will become soddened and lose their flavour. Beef and mutton, especially large pieces or joints, a little underdone, will hash or broil all the better for it; but lamb, pork, or veal are uneatable if not thoroughly boiled, though by no means ought they to be overdone. To calculate this, weigh the meat, and allow for all salted joints a quarter of an hour for every pound, and some minutes over (from ten to fifteen) according as the family like it, over or under done. A leg of pork will take the allowance above named, besides allowing a quarter of an hour for each pound.

A ham, weighing twenty pounds, will take four hours and a half boiling; others in proportion. They should be put into boiling water, if not over dry, and suffered to simmer the whole time. On boiling, Count Romford observes (vide 10th Essay, pp. 3—6), "the process by which food is most commonly prepared for the table.—*Boiling* is so familiar to every one, and its effects so uniform, and apparently so simple, that few, I believe, have taken the trouble to inquire *how* or in *what manner* these effects are produced, and whether any, and what improvements in that branch of cookery are possible: so little has this matter been an object of inquiry, that few, very few indeed, I believe, among the *millions of persons* who for so many ages have been daily employed in this process, have even given themselves the trouble to bestow one serious thought on the subject." *Boiling* cannot be carried on without a very great expense of fuel; but any boiling-hot liquid (by using proper means for containing the heat) may be kept boiling-hot, for any length of time, almost without any expense of fuel at all.* The *waste of fuel* in culinary processes, which arises from making liquids boil *unnecessarily*, or when nothing more would be necessary than to keep them boiling hot, is enormous. I have not a doubt, but that much more than half the fuel used in all the kitchens, public and private, in the whole world, is wasted precisely in this manner. But the evil does not stop here,—this unscientific and slovenly manner of cooking, renders the process much more laborious and troublesome than otherwise it would be; and (what by many will be considered of more importance than either the waste of fuel, or the increase of labour to the cook) the food is rendered less savoury, and very probably less nourishing and less wholesome.

It is natural to suppose that many of the finer and more valuable parts of food (those which are best calculated to act upon the organs of taste) must be carried off with the steam when the boiling is violent. Though boiling does not require so much nicety and attention as roasting, it is evident much is to be gained, by due attention, both as regards economy and good taste.

BORRAGE. — An herb which, like Buglos, is much used in cooling broths, and for other culinary purposes. The flowers are used in medicinal cordials, and the herb again for cool tankards in summer. It is called one of the four cordial flowers—it comforts the head, cheers drooping spirits.—(*Salmon's Household Companion*, p. 45, London, 1710), and Evelyn, in his Acetaria, says, "The sprigs in wine are of known virtue to revive the hypochondriac, and cheer the hard student." Combined with the ingredients in the above receipt, we have frequently observed it produce all the cardiac and exhilarating effects ascribed to it. Both borrage and buglos are hard of digestion.

BRANDY.—*Aqua Vitæ*, L. *Eau de vie*, F. Brandy is a spirituous and inflammable liquor, extracted from wine and other liquors by distillation. The best is obtained from the wines of the middle provinces of France, and is esteemed the best in Europe. The chief French brandies are those of Bordeaux, Rochelle, cogniac, the Isle of Rhe, Orleans, Nantz, and Poitiers. The wines of Languedoc and Spain yield about one quarter of brandy; Burgundy, less than an eighth; Bordeaux, about a fifth.

An inferior sort of brandy is obtained from wines which have turned sour, and from the lees left in the

* *Water remains at the same pitch of temperature however fiercely it boils;* the only difference is, that with a strong fire it sooner comes to boil, and most quickly boils away, and is converted into steam. —See *Buchanan on the Economy of Fuel.* 1810.

casks on racking the wine from one vessel to another, for the sake of fining it; and a still worse sort from the cake and refuse of the winepress, fermented for the purpose, with the addition of water;* when first distilled, brandy is white like water, but by keeping in oak casks it acquires a deep colour; and improves by keeping. Extract of oak is frequently dissolved in it, to give it a false appearance of age.

The art of distilling brandy and other spirits was first brought into Europe by the Moors of Spain, about the year 1150. They learned it of the African Moors, who had it from the Egyptians; and these are said to have practised it in the reign of the Emperor Dioclesian, though it was unknown to the ancient Greeks and Romans.

The intemperate use of brandy and other spirituous liquors is a detestable practice, which includes in its consequences almost every evil, physical and moral; it attenuates the body, impairs the strength, stupifies the brain, and, in most instances, shortens the duration of human existence. See *Ardent Spirits*.

The utility of brandy is every where considerable; but from its pleasant taste and exhilarating property, it is too often taken to excess. When, however, it is used moderately, it gives energy to the animal functions, it is powerfully tonic, cordial, and antispasmodic; and its utility in gangrenous affections is very great. In the spasmodic cholera, which so alarmingly prevailed of late throughout the British dominions, its judicious exhibition in conjunction with the tincture of opium, has frequently been attended with the most beneficial results; and in giving a new character, after the administration of the usual remedies, to *choleric* attacks of the bowels, brandy has superseded, in the most efficient manner, all the tonics of the pharmacopœia, when given with proper caution, and the spirit has been genuine.

There was formerly a certain probatory experiment, by means of which it was supposed that French brandy could be distinguished from malt spirit; and likewise genuine from adulterated brandy—indeed, this or some such-like test remains, we believe, still a desideratum—although a connoisseur in brandy will draw a tolerably correct inference as to quality, from the smell, taste, as well as colour of this spirit. The test liquor used for this experiment is of a dusky yellow tincture—indeed, the muriatic tincture of iron appears to answer the same purpose. The following is the method of using it:—

Fill a glass with the brandy that is suspected, and into this glass put one, two, or three drops of the above tincture, more or less, according to the quantity you are testing; and if the brandy be good and genuine, there immediately appears at the bottom of the glass a very beautiful blue colour, which, if stirred, and well mixed with the rest of the brandy, tinges it entirely of an azure; but if the spirits be the produce of malt, no such tincture will be seen in the glass, this kind retaining its original tincture, though twenty times the quantity of the test liquor be added. And, therefore, this method of proving does, according to the opinion of the merchants generally, serve to distinguish pure malt spirits from pure French brandy.

Neumann, the celebrated chemist, was at first very much pleased with

* Mr. Consett, in his Sweedish Tour, says they make the low-priced brandy in that country from rye and a species of ants—a large black insect very plentiful there; and which the natives think highly palatable and pleasant to eat. In Virginia and Maryland, peaches and apples afford brandy. That made from the former, Mr. Cooper deems as fine a liquor as ever he tasted.

this method of proving spirits, and at first view took it to be altogether certain and infallible; though upon reflection, and more accurate examination, he found reason to change that opinion, by deciding that the appearance produced was entirely owing to oak wood casks, in which the spirit had previously been contained for some length of time.

This test liquor, or solution, should be made of pure iron vitriol, and not of copper. The causes and origin of the blue tincture which it occasions in the brewery, remain to be explained; but because Mr. Neumann took the origin to be the same with new or diluted ink, whose chief ingredients that produce the tincture are the same, namely, vitriol or iron, and an astringent vegetable. In fine, Neumann observed that no other difference should be sought for between *French* brandy and malt spirits, namely, such as are pure and carefully distilled, than the peculiar flavour of French brandy; though the same flavour may be several ways communicated to malt spirits, and then thus adulterated into French brandy; so that the most expert connoisseurs might be imposed upon by it for genuine brandy, or at least not for malt spirits; hence the above tests on spirits are of no use, or at least insufficient, as we apprehend those which are in contemplation at the present time will turn out to be. A few drops of liquid ammonia will give to new brandy all the qualities of that of the oldest date. The best test for the actual strength of gin, will be that which precipitates the sugar it contains.

BRAWN.—In the culinary art, brawn signifies the flesh or muscular parts of a hog, boned, rolled up, or collared, boiled, and, lastly, pickled for winter use. Brawn was an old word for flesh; and though now appropriated to the rolls made from the boar, was once common to all kinds of meat. Among the old recipes of cookery, we have brawn of capons, brawn of swine, &c. Canterbury and Shrewsbury have been long noticed for the superior quality of their brawn, and of late brawn has been made at Oxford.—See *Bourn's Gaz. art.* Colard.

To make Mock Brawn.—Take the head and piece of the belly-part of a young porker, and rub it well with saltpetre. Let it lie three days and wash it clean. Split the head and boil it; take out the bones and cut it in pieces. And then take four ox-feet boiled tender, cut them in thin pieces, and lay them in the belly-piece, with the head cut small. Then roll it up light with sheet tin, and boil it four or five hours. When it comes out set it up on one end, put a trencher on it within the tin, press it down with a large weight, and let it stand all night. The next morning take it out of the tin, and bind it with a fillet. Put it into cold salt and water, and it will be fit for use. It will keep a long time, if you put salt and water to it every four days.

BRAINS.—The brains of quadrupeds are of a clammy and glutinous nature, not altogether cold; and according to Aristotle engender the like nourishment, are difficult of digestion, clog the appetite, especially if eaten too abundantly. The moister the animal is, the moister are the brains. And yet calves' and pigs' brains are in great esteem with some; as well as those of rabbits, which are not so moist as the former. They should be eaten with condiments; such as pepper and vinegar, sage and other dry herbs. Such food, and other glutinous, cold and clammy nourishment, are best adapted to young and hot constitutions.

BREAD.—A baked mass of dough made from the flour of wheat or other grain: it forms a constant part of human aliment.

Bread may be made of any farinaceous matter whatever, but it is of very different qualities. That made of wheat is doubtless the best; but potatoes when cheap, may be converted into bread, perhaps not alone, but mixed with wheat meal. Five pounds of bean flour made into a decoction, and this decoction employed for making dough, will afford more bread than if the dough was prepared with water; this decoction being kneaded with fifty pounds of flour, and worked as usual with salt and yeast, gave ninety three pounds of dough, which, on being baked, produced eighty-two pounds and three quarters of bread; fifty-five pounds of flour, made into dough in the common way, produced sixty-nine pounds and a half of bread: hence by the former process there was gained one-fifth, or fourteen pounds. Rice boiled in water to a sort of jelly, will make as much pudding as eight pounds of wheat flour: if previously boiled with a pulp, and then mixed with wheat flour and made into a dough, it considerably augments the quantity of bread; this arises from its greater power of consolidating water. The best and most agreeable bread is a mixture of three parts of flour and one of rice. A quarter of a pound of rice boiled, and mixed with three quarters of a pound of flour, and made into dough with water in which it was boiled, gave one pound fourteen ounces of bread; but the same quantity of bread made in the common way would require one pound and a quarter of flour.

Mr. Accum, in his Treatise on Culinary Poisons, states, that the inferior kind of flour which the London bakers generally use for making loaves, requires the addition of alum to give them the white appearance of bread made of fine flour. "The baker's flour is very often made of the worst kinds of damaged wheat, and other cereal grains mixed with them in grinding the wheat into flour. In this capital (London), no fewer than six distinct kinds of wheaten flower are brought into the market. They are stiled fine flour, seconds, middlings, fine middlings, coarse middlings, and twentypenny flour. Common garden beans and pease are also frequently ground up among the London bread flour."

Flour turned acid, and not fit for use, was rendered sweet by adding two tablespoonsful of the carbonate of soda to fourteen pounds of flour. It was then made into dough as usual, and good bread was produced, though altered in colour: the soda here united with the acid of the flour, and the carbonic acid being set free, assisted in the fermentation of it.

Good bread ought to be composed of flour well kneaded with the lightest water, seasoned with a little salt, fermented with fine yeast, and sufficiently baked at a proper heat. When baked it ought to appear through glass like a honey-comb, full of cells, yet the intermediate parts constitute a uniform substance of a gelatinous nature, which readily unites with an aqueous menstruum. But instead of this wholesome bread, bakers contrive to mix up many pernicious ingredients with it, in order to sell it at a reduced price, and that their profits may be augmented. Alum, lime, chalk, whiting, and burnt bones, have not unfrequently found their way into the "staff of life." Although the evils arising from the practice of the adulteration of bread, may have been somewhat exaggerated, it is certain that bad flour will never make good bread, nor of sufficient whiteness to please the eye of the capricious epicure, without the addition of alum. It has also been found, that unless alum be introduced into the flour, the loaves run together in the oven, and do not afterwards separate from each other with a smooth surface. This is probably owing to the action of the alum upon the mucilage of the flour, which it coagulates. It has been asserted, that the smallest quantity of this salt that can be employed for this purpose is from three to four ounces, to two hundred and forty pounds of flour. The introduction of a portion of alum into the human stomach, however small, it is well known, may prove prejudicial to the exercise of its functions, and particularly to those already labouring under indigestion, &c. And, according to Accum, the smallest quantity of alum that can be employed with effect, to produce a white, light, and porous bread from an inferior kind of flour, is from three to four ounces to a sack of flour weighing two hundred and forty pounds. The following account of making a sack of five bushels of flour into bread, is taken from Dr. P. Markham's "Considerations on the Ingredients used in the Adulteration of Flour and Bread."

Flour	5	bushels.
Alum	8	ounces.
Salt	4	pounds.
Yeast	½	gallon, mixed with
Water	3	gallons.

Subcarbonate of ammonia is another substance used by fraudulent bakers, with which they realise the important consideration of producing light and porous bread from spoiled, or what is technically called *sour flour.* This salt, which becomes wholly converted into a gaseous substance during the operation of baking, causes the dough to swell up into air bubbles, which carry before them the stiff dough, and thus the latter is rendered porous; the salt itself is, at the same time, totally volatilized during the operation of baking.—See *Alum.*

Good flour yields bread sufficiently white, without any artificial admixture; but brown bread, simply made, merits the preference, as it is easier of digestion, and affords better nourishment. The flour of wheat contains three distinct substances:—1. A mucilaginous saccharine matter. 2. Starch. 3. Gluten, a peculiar substance, possessing many of the properties of animal matter. It is to the quantity of the latter ingredient that wheat flour possesses so decided a superiority over that of barley, rye, or oats, since from the latter grains less gluten can be extracted; and it furnishes the best ingredient for making bread, although it may be also made of all the various sorts of grain, as well as of chestnuts, of several roots, and of the potatoe.

Bread newly baked has a peculiar odour as well as taste, both of which are lost by keeping; showing that some peculiar substance must have been formed during the operation, the nature of which is not underderstood. Bread differs completely from the flour of which it is made, since none of the ingredients of the latter can be detected in it; it is much more miscible with water than dough; and on this circumstance its good qualities, in all probability, depend.

The different kinds of bread used in this country may be considered under three heads—namely, *white, wheaten,* and *household.* In the first, the bran is separated; in the second, only the coarser; in the last, none at all—so that fine bread is made only of flour; wheaten bread of flour and a mixture of the finer particles of the bran; and that called household of the whole substance of the grain, without separating either the coarse bran or fine flour. It is necessary that these distinctions should be understood; for an important dietetic fact is connected with them. The action of starch upon the bowels is astringent; bread, consequently, made of the whitest flour is apt to induce costiveness; which, however, is counteracted by the presence of bran, the scales of which, it would appear, exert a mechanical action upon the intestines.

Our neighbours, the French, have several sorts of bread, in which eggs, milk, and butter, are combined. They are also in the habit of adding ammonia to the dough, which causes it, during its evaporation in the oven, to rise, and thus adds to the sponginess of its texture.

Bread made from barley flour has a sweetish but not unpleasant taste; but it is rather tough, and is less nutritive, as well as less digestible, than wheaten bread. It is usual to mix pea-meal with the barley, which unquestionably improves the product. Rye-bread is of a dark brown colour, and is apt to lie heavy on the stomach, and is liable to create acid, and affects the bowels—though it is deemed highly nutritive. In places where bread is made from oatmeal, there is a mode of preparing the meal by making it sour; the bread, instead of being hard, is thus rendered of a soft texture, and from its moderate degree of acidity it is wholesome to persons of robust habits, though to invalids and convalescents it is by no means so desirable. In the form of bread, however, oatmeal is commonly in an unfermented state, or it is made into thin, flat cakes, which are baked on a girdle, or roasted before the fire. Porridge made of oatmeal, the common food of children and the lower and even the middling classes of adults in Scotland, is not so heavy as that made of wheat flour; though both of them require vigorous organs of digestion, robust constitutions, and strong exercise, in order to produce a proper nutriment.

A good household bread is directed to be made as follows. Put a quartern of flour into a large tub, with two or three spoonsful of salt, make a hole in the middle, then put in a basin four table-spoonsful of good yeast; stir in a pint of milk, lukewarm; put it in the hole of the flour; stir it just to make it of thin batter; then strew a little flour over the top, set it on one side of the fire, and cover it over; let it stand till the next morning—then make it into dough; add half a pint more of warm milk; knead for ten minutes, and then set it in a warm place by the fire for an hour and a half; then knead it again, and it is ready either for loaves or bricks: bake them from one hour and a half to two hours, according to the size.

A variety of processes are used by cooks, confectioners, and others, to make cakes, puddings, and other kinds of bread, in which different qualities are required. Some cakes are rendered better, or, as it is called, *short*, by an admixture of sugar or of starch. Another kind of brittleness is given by the addition of butter or of fat. White of egg, gum-water, isinglass, and other adhesive substances are used where it is intended that the effect of fermentation shall expand the dough into an exceedingly porous mass. Dr. Percival has recommended the addition of salep, or the nutritive powder of the orchis root. He says that an ounce of salep dissolved in a quart of water and mixed with two pounds of flour, two ounces of yeast, and eighty grains of salt, produced a remarkably good loaf, weighing three pounds two ounces; while a loaf made of an equal quantity of the other ingredients, without the salep, weighed but two pounds twelve ounces. If, however, the salep be in too large a quantity, its peculiar taste will be distinguishable in the bread.

Bread itself, if eaten too freely, or to serve as a meal, produces viscidity or slime, obstructs the intestines, and lays the foundation of habitual costiveness. All dishes prepared of flour, are not only nourishing, but emollient, attenuating, and correctors of acidity. Leavened bread, or such as has acquired an acidulated taste by a slow fermentation of the dough, is cooling and antiseptic—a fact well established by experience. By the fermentative process, all the tough parts of the dough are intimately mixed with the drier parts of the flour, and the fixed air is expelled in baking.

Fresh baked bread always contains much of an indigestible nature, which is remedied, either by allowing it to dry for a day or two, or by toasting it. This ought to be constantly done, particularly in times of scarcity, both on account of health and economy. Stale bread, in every respect, deserves the preference: and persons troubled with flatulency, cramp of the stomach, and indigestion, should on no account eat new bread, and still less hot rolls and butter. Indeed pastry, generally, is esteemed unwholesome. The porous quality of bread arises from the fixed air having been expelled in baking; and the more spongy the more wholesome is the bread considered. But new-baked bread, and rolls in particular, require a sound stomach, because they contain much mucilage, in consequence of not having parted with their moisture; and wheat flour is more viscid than that of rye, which is the bread corn of most nations on the Continent.

Bread and butter, together with cheese, as they are eaten in Holland and Germany, form a mass scarcely digestible. The crust of bread, which has been more dried by the heat of the oven, is easiest digested; it contains the empryreumatic in part, expelled from the flour by fire; it produces an emollient effect on the bowels; but, at the same time, is more heating and less nourishing than the softer parts or crumb.

The great difference in bread is owing, partly to the various species of grain from which it is made, and partly to the time the flour has been kept; for, when new, it is more difficult to deprive it of its tenacity, on account of its being more or less cleaned from the bran; owing to the different methods of fermenting and baking it; to the difference of the water with which the flour has been kneaded: and lastly, to the various ingredients of which the paste has been compounded. The softness of the millstones used in grinding the flour may also vitiate the bread, by introducing particles of sand and marble, so as to make it equally noxious to the teeth, and oppressive to the stomach. Well-baked and thoroughly dried bread, is easily dissolved by water, without rendering it viscid or gelatinous: hence it is adapted for the use of the debilitated, as well as for every age or temperament.

It is not necessary to eat bread with every kind of diet; it is more useful and necessary with such articles that contain much nourishment in a small bulk, in order to give the stomach a proper degree of expansion. Besides, the addition of bread to animal food has another advantage, namely, that of preventing the disgust attending a too copious use of animal food, and its strong tendency to putrefaction. But if we accustom ourselves to eat new baked bread with provisions already indigestible in themselves, as fat geese, bacon, and the like, we render them still more unsupportable to our digestive organs.

Of the different kinds of grain from which bread is prepared, that of rye is by far the most wholesome for people of a sedentary life, as well as for the delicate and nervous. For though it be less nourishing, it is likewise less tenacious, and more easily digested than bread made of wheat.

Compositions of various substances to serve as substitutes for bread, such as grey-pease, horse-beans, potatoes, and many other farinaceous vegetables, have been repeatedly tried; and though a very nourishing and palatable bread was formed of flour, mixed with potatoes and rice, the prejudices in favour of wheaten bread, by all classes, were too great and inveterate, to admit so useful and beneficial an innovation; although, as regards public and private economy, they are not only proper, particularly in times of scarcity, but they are not in the least detrimental to health.

Unleavened bread consists of a mixture of meal and water, formed into a tough and firm cake, made as thin as possible, to favour its drying; and not unfrequently with the addition of butter, to render it more soluble, friable, and porous; though it renders it more sour, and apter to become acescent on the stomach. Of the unleavened kinds of bread, biscuit is by far the best; and where leavened or fermented bread does not agree, its use cannot be too strongly recommended. Potatoe bread is common in Ireland; and turnip bread is used in some parts of England. In the time of James I. the usual bread of the poor was made of barley.* In Iceland, dried cod-fish is beaten to powder, and made up into cakes, and eaten for bread. The same kind of bread is made among the Laplanders, whose country affords no corn. Bread, such as ours, is not only a very agreeable, but a very wholesome and nutritive aliment when properly and honestly made; and deemed the fittest and lightest food for human bodies.

Dr. Shaw, in his Travels, says, that the eastern nations in general are great eaters of bread; it being computed that three persons in four entirely live upon it, or else on such compositions as are made of barley or wheat flour. The French are great consumers of bread; which they season with fruits of various kinds, and dilute with wine, cider, or milk, &c. Anciently every housewife was her own baker: and the learned are in great doubt about the time when baking became a particular profession, and bakers were introduced. It is, however, generally agreed, that they had their origin in the east, and passed from Greece to Italy, after the war with Pyrrhus, about the year of Rome, 583.—See *Dr. Rees's Cyclop.* and *Encyclop. Brit. art. Baker.*

* The Jews frequently ate barley bread; and our Saviour and his apostles had no other provision than five barley loaves and two small fishes, John vi. 9. Hosea (ch. iii. 2), says, that he purchased his wife for fifteen pieces of silver, and an omer and a half of barley. The word bread is sometimes employed to signify a thing of low price. See Ezekiel xiii. 19. An omer, or homer, contained nearly six pints. The principal use of barley in great Britain, as already mentioned, is its conversion into malt for the purpose of brewing.

BREAM.—A river fish—easier of digestion than carp, which it much resembles, though inferior in quality to the perch, and some others. Its flesh is soft and tender, and more esteemed for the goodness of its taste than carp. Most authors who have treated of this fish, say that it contains gross and excrementitious juices, and that its taste is more pleasant than wholesome. It has not been known to produce any very bad efffects.

BRET-FISH.—(Flat Fish and Burt).—These are all three sea-fishes, called in Latin, *Passeres Squammosi.* The first mentioned has the best taste, and in shape is much like a sole. It is flat, pretty large, and beset with small rough scales, adhering closely to the skin. The next (flat-fish), is covered with small black scales, marbled with red; and much resembles a flounder, though smaller. And the other, Burt, does not differ from the last, except in not being so large. All three are much used for food: they are also soft, white, and altogether like plaice and flounders.

Those are the best that are fresh, tender, white, and pleasing to the taste. They are nourishing enough, and produce no ill effects, unless used in excess. They agree at all times, with any age or constitution.

BROILING.—The process of preparing animal food upon a gridiron. In this process, as in that connected with every other branch of the culinary art, cleanliness and care are equally important and indispensable. The gridiron must be kept quite clean between the bars, and bright on the top; before it is used the bars ought to be rubbed with clean mutton, to prevent the meat from being marked with them. Before the meat is laid on, be careful that the fire is very clear. Turn the meat quickly while it is broiling, and have ready a dish placed in a chaffing-dish of hot coals, and put the meat in as fast as it is got ready, and carry it hot and covered to table; observe never to baste any thing on the gridiron, because that may be the means of burning it, and occasioning it to smoke.

"And now as there is nought on the fire that is spoiling,
We'll just give you two or three hints upon broiling;
How oft' you must turn a beefsteak, and how seldom
A good mutton chop, for to have 'em both well done;
And for skill in such cookery your credit 't will fetch up,
If your broils are well seasoned with good mushroom ketchup."

1. *To broil Beef Steaks.*—The best steaks are those cut off the rump, and they should not be more than half an inch in thickness. When well cooked, steaks are a favourite and frequent dish, and have a most inviting appearance. Let there be a clear fire, and rub the gridiron with beef suet; when the gridiron is hot, lay on your steaks, and let them broil till they begin to look brown; then turn them, first dropping any gravy, that may have oozed out on the upper side, into the warm dish on which you intend to serve them, and when the other side is brown, lay them on the same dish, with a slice of butter between each steak, and sprinkle a little pepper and salt over them. Let them stand two or three minutes, and, in the mean time, slice a shalot as thin as possible into a spoonful of water; lay your steaks again on the gridiron, and keep turning them till they are done enough; then dish them, and pour the water and shalot among them, with or without mushroom ketchup, and serve up.

2. *To broil Mutton Chops.*—Take a loin or neck of mutton, and cut chops from it about half an inch thick, and cut off the skin and part of the fat; the bones should not be long; rub your gridiron with such, as soon as it is hot, and lay on the chops over a clear fire, turn them often, and take care that the fat which keeps falling from them do not make the fire blaze, and smoke them; put them into a hot dish as soon as you think they are done, and rub a little butter over them, slice a shalot very thin, with a spoonful of water, and pour it over them, with a sufficient quantity of mushroom ketchup.

The same rules will apply for pork chops as for mutton, with this difference, that the former requires more broiling than the latter; as soon as they are done, add a little good gravy to them, strew finely-powdered sage over them, which will give them an exquisite flavour.

BROTHS.—A decoction of animal and vegetable substances. When properly made, with a requisite proportion of animal and vegetable substances, without fat, broths and soups are wholesome and nutritive articles of diet, and may supply the

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* "The rarish ways of dressing all manner of roast meats, either flesh or fowl, by sea and land, and divers ways of breading or dredging meats, to prevent the gravy from too much evaporating."—*May's Accomplished Cook.* London, 1665, p. 136.

place of both meat and drink; though bread ought invariably to be consumed with them, unless taken in very minute quantities at a time. Light broths agree with weak stomachs; and mutton is reckoned the best ingredient on these occasions, though if taken in any quantity, without the addition of solid food, they are apt to lie heavy. A small quantity of solid aliment sometimes agrees better. The idea of broths diluting the gastric juice too much, is a physiological error which needs no refutation. The gastric juice is only secreted as required, and the less stimulating the food the smaller portion of it becomes necessary. Bland and easily digestible substances, and mild liquids, stand in need of the least aid to assimilate them: it would be preposterous to suppose, that a greater quantity of gastric juice is present at all times than there is a demand for it. And if a liquid, holding nutritive matter in solution, be introduced into the stomach, it is either coagulated by the gastric juice, or its watery part is absorbed, and the solid matter deposited; in both cases the changes which they undergo are determined by the nature of their compositions—the one is absorbed and the other chymified; since it may be concluded that the solid form is an indispensable condition of bodies which are destined to undergo the processes of both chymification and their subsequent conversion into chyle; for, unless some provision had existed for the removal of the watery fluid from the stomach, the digestive functions could not have been properly performed.

In making soups, broths, or gravies, the cook should pay particular attention to his pots, saucepans, and covers, and see they be very clean, and free from all sand and grease, and at the same time properly tinned; as if this particular be not cautiously attended to, the soups, gravies, and broths will acquire a bad taste, as well as prove deleterious to the health and constitution of many. When you make any kind of soup, particularly vermicellis, portable, or brown gravy soups, or any other soups that have herbs or roots in them, be sure to lay the meat at the bottom of the pan, with a large piece of butter; then cut the roots and small herbs, and having laid them over the meat, cover the pot or saucepan closely, and keep it over a slow fire, which will draw all the virtue out of the vegetables, turn them to a good gravy, and give the soup a very different flavour to what it would have by acting in any other manner. If your gravy should be almost dried up, replenish it with water, and when it begins to boil take off the fat, and follow the directions laid down for the particular kind of soup or broth, which are copiously laid down in every Cookery book. Soft water will answer the purpose better, in making old pease-soup; but when soup is to be made of green pease, hard water must then be used, as it will preserve the colour of the pease better. In the preparation of white-soup, remember never to put in your cream till you take your soup off the fire, and the last thing you do must be the dishing of your soups. Gravy-soup will have a skim over it by standing; and from the same cause pease-soup will often settle and look thin at the top. Lastly, let the ingredients of your soups and broths be so properly proportioned that they may not taste of one thing more than another, but that the taste be equal, and the whole of a fine and agreeable relish. Should you be apprehensive that gravy-meat may be spoiled before it be wanted, season it well, and give it a slight frying, which will preserve it some days longer; though the gravy is best when the juices are fresh. When gravies or soups are to be put by for occasional use, they should be daily shifted into fresh scalded pans. Any thing in which vegetables have been boiled, is liable to turn sour sooner than the pieces of meat alone. When any fat remains on soup, a little flour and water, uniformly mixed and boiled in it, will remove it. Should it be required to give a greater degree of richness or consistency, a piece of butter mixed with flour, and boiled in the soup, will command either of these qualities.

In the preparation of alimentary broths and soups the following directions are to be attended to.

1. Procure wholesome meat properly killed.

2. Earthen vessels are preferable to those of metal, because the first are less conductors of heat, and when once heated, a few hot cinders will keep them in as gentle a degree of boiling as may be required.

3. Use double the quantity of water to the weight of meat.

4. A sufficient quantity of common salt to facilitate the separation of the albumen as well as its coagulation in the form of broth.

5. Sustain a temperature capable of carrying on the boiling of the mixture the whole of the time the froth is collecting on the surface of the liquid, which you will take good care to remove.

6. A temperature lower than required by the preceding operation, and always of an uniform heat, that the liquid may only gently simmer, to afford time for the nutritive particles and colouring, and extractive substances contained in the meat, to unite and combine with the water in the order of their respective solubility.* Again, it is not the quantity of meat alone that makes good soup, but the manner in which the pot is managed on the fire. What is soup? A decoction of meat containing animal extractive matter, as osmazome, which colours it, salt, and especially gelatine. In order that the meat may yield these principles to the water, the water must gradually penetrate the meat, dilate the muscular fibres, and dissolve the gelatine which is interposed between them; but in these same muscles there is likewise albumen. This albumen coagulates and becomes hard at a temperature of 80°. Reaumere (212° Fahrenheit). If then you cause your pot to boil rapidly, before it be sufficiently diluted and penetrated by the water, what is the consequence? The albumen coagulates in the meat itself, and prevents the gelatine from escaping, you have both a *weak* and a *hard* soup; but, on the contrary, if you have managed the fire in such a manner that the meat has had time to be penetrated, the albumen will gather up in a froth, the gelatine dissolves, the soup is savoury and nourishing, and the boiled meat tender. This constitutes the whole theory of pot boiling.*—See *Boiling*.

BROWNING.—The culinary process of colouring soups, gravies, &c.

BROWNING, FOR SOUPS, GRAVIES, &c.—To give colour to soups and gravies, fry some onions with flour to a good brown colour, but do not burn them, and add to the soup; or a piece of bread toasted as hard and brown as possible, but not blackened; or melt some lump sugar in an iron ladle till it becomes brown, pour it upon boiling water, and stir it; give it a boil and keep it for use in a bottle. Truffles and snorells thicken soups and sauces, and give them a fine flavour; and the clear jelly of cowheels is also an useful ingredient in a house, as being an excellent improvement to soups and gravies; marrow-bones, shankbones of mutton, the gravy in which meat has been boiled, all contribute, by the addition of vegetables, in making excellent soups.

To make Browning for Soups or

* Parmentier Code Pharmaceutique, 1811. p. 444.

* Cours Gastronomique, 1809. p. 291.

Gravies.—Add four ounces and a half of lump sugar, to a gill of water (quarter of a pint), and half an ounce of the finest butter; put them into a small pot, and set them over a gentle fire, and stir them with a wooden spoon till they become of a light brown: then add a pint of water, boil and skim it, and bottle off for use when cold, and cork it close. As much of this may be added to soup or gravy as will give it the desired colour.

A Clear Browning for Gravy or Gravy Soups.—Put a knuckle of veal, two pounds of lean beef, and an equal quantity of a lean gammon of bacon, all cut in slices, into a stewing pan, with a sufficient quantity of scraped carrots, onions, turnips, and celery, to two quarts of water; let the meat be stewed till quite tender, but do not brown it. Thus prepared, it will serve either in soup, or brown, or white gravy; if for brown, add some of the above colouring, and boil a few minutes.—See *Made Dishes*.

BUCKBEAN.—See MARSH TREFOIL.

BUCKWHEAT.—Used in several places to make bread; which is easily digested, though not so nutritive as ours. It contains much oil, and a little salt. It is called Saracen crumb, because it formerly grew plentifully among the Saracens.

BUGLOSS.—Bugloss and Borrage are two plants much used in cooling broths. We place them here together, because they possess the same virtues, and are often used the one for the other. They qualify the acrimony of the blood and other secretions. Their flowers are pectoral and exhilarating. They are hard of digestion when eaten in substance; they consequently require to be previously well boiled. They agree at all times with young people of a hot and bilious constitution.

BURNET.—There are two sorts of Burnet, one wild, growing in the fields, and not much used in food; and the garden burnet, most in use. It is difficult of digestion, and induces costiveness when used to excess. That is to be chosen which is tender, small, and of an agreeable taste and smell. It is commonly used in salads. It was not known to the ancients. Some authors have placed it among the species of sassafras. Moderately used, it agrees with all ages and constitutions.

The chief virtue in burnet is in its essential oil; it opens the venal glands, and gives a free passage to the serous humours that are continually filtrating there, and expels those gross humours which tend to obstruct the urinary passages.

Burnet, in Latin, is called *Pempenella quasi Bepinella*, because the leaves of it are two and two, ranged along the sides like those of the pine tree. It is also called Sanguisorba from its styptic properties.

BURRAGE.—See BORRAGE, BUGLOSS.

BUTCHERS' MEAT.——The flesh of all quadrupeds used as food, with the exception of those which come under the manipulation of the poulterer, as hares, rabbits, &c. falls within this denomination.

BUTCHERS' MEAT, To CHOOSE.—Some directions in the selection of butchers' meat are of great importance to all who desire to have the operations of the stomach conducted on the most salutary principles. Independent of this, to be able to distinguish the different kinds of meat, as exhibited for sale in the shambles, is a point of domestic economy from which considerable advantages are derivable.

1. *Ox-Beef.*—In the choice of ox-beef, observe the following directions: If the meat be young, it will have a fine smooth open grain, of a pleasing carnation red, and very tender: the fat must incline to a white rather than a yellow hue; for when it is quite yellow the meat is seldom good. The suet ought to be perfectly white.

2. *Cow-Beef.*—The grain of cow-beef is closer, the fat whiter, than that of the ox-beef, but the lean has not so bright a red.

3. *Bull-Beef.*—The grain of bull-beef is still closer; the fat hard and skinny.

4. *Mutton.*—If you squeeze young mutton with your fingers, it will feel very tender; but if it be old, it will feel hard and continue wrinkled, and the fat will be fibrous and clammy. The grain of ram mutton is close, the flesh is of a deep red, and the fat is spongy. The flesh of ewe mutton is paler than that of the weather, and the grain is closer. Most people give the preference to short shanked mutton.

5. *Lamb.*—The head of a lamb is known to be good, if the eyes are bright and plump; but if they be sunk and wrinkled, it is stale. If *the vein in the neck* of the fore-quarter appear of a fine blue, it is fresh; but if it be green or yellow, you may be sure it is stale. In the hind-quarter, if there be a faint disagreeable smell near the kidney, or if the knuckle be very limber, it is not good.

6. *Veal.*—The flesh of a cow-calf is whiter than that of a bull, but the flesh is not so firm. The fillet of the former is generally preferred, on account of the udder. If the head be fresh the eyes will be plump; but if stale, they will be sunk and wrinkled. If the vein in the shoulder be not of a bright red, the meat is not fresh; and if there be any green or yellow spots in it, it is very bad. A good neck and breast will be white and dry; but if they be clammy, and look green or yellow at the upper end, they are stale. The kidney is the soonest apt to taint in the loin, and if it be stale, it will be soft and slimmy. A leg is good if it be firm and white; but bad, if it be limber, and the flesh flabby, with green or yellow spots.

7. *Pork.*—Measly pork is not only unwholesome to eat, but this state of it is not difficult to detect, by the fat being full of kernels or little lumps. If it be young, the lean will break on being pinched, and the skin will indent by nipping it with the fingers; the fat, like lard, will be soft and pulpy. If the rind be thick, rough, and cannot be nipped with the fingers it is old. If the flesh be cool and smooth, it is fresh; but if it be clammy, it is tainted; and, in this case, the knuckle will always be the worst.

8. *Hams.*—Those hams are the best which have the shortest shank. If you put a knife under the bone of a ham, and if it come out clean, and smell well, it is good; but if it be daubed and smeared, and has a disagreeable smell, it is bad.

9. *Bacon.*—If bacon be good, the fat will feel oily, and look white; and the lean will be of a good colour, and stick close to the bone; but it either is, or will be rusty very soon, if there be any yellow streaks in the lean. The rind of young bacon is always thin; but if old, thick.

10. *Brawn.*—The rind of old brawn is thick and hard; but young if moderately so. The rind and fat of barrow and sow brawn are very tender.

11. *Venison.*—The fat of venison must, in a great measure, determine your choice of it. If the fat be thick, bright and clear, the clefts smooth and close, it is young; but a very wide tough cleft, shews it to be old. Venison will first change at the haunches and shoulders (the places, it is presumed, where they are first attacked by the dogs); at these parts run in a knife, and you will soon be able to judge of its newness or staleness, by its sweet or rank smell. If it be tainted, it will look greenish, or inclining to be very black.

Obs.—Meat in which the slightest putrefaction can be detected, has reached its highest degree of tenderness, and should be dressed without delay; but before this period, in which some kinds of meat is offensive, the due degree of inteneration may be ascertained by its yielding readily to the pressure of the finger, and by opposing little resistance to an attempt to bind the joint. Although it be strongly recommended to hang up animal food in the air, till its fibres have lost some degree of their toughness—yet, let us be clearly understood also to warn you, that if kept till it loses its natural sweetness, it is as detrimental to health, as it is disagreeable to the smell and taste. The time meat should hang to be tender, depends on the heat and humidity of the atmosphere: if it be not kept long enough, it is hard and tough; if too long, it loses its flavour: it should be hung where it will have a thorough air and draft, and be dried with a cloth night and morning, to keep it from damp and mustiness. Before it be dressed, let it be well washed; if it be a roasting piece, pare off the outside.

If you fear meat will not keep till it be wanted, *par*-roast or *par*-boil it; it will then keep a couple of days longer, when it may be dressed in the usual manner, with the exception, that it will be done in less time. "In Germany, the method of keeping flesh in summer, is to steep it in Rhenish wine, with a little sea-salt; by which means it may be preserved a whole season.'—*Boerhaave's Academ. Lect. translated by J. Nather*, 8vo. 1763, p. 241.

The butcher and the cook often lose their credit by meat being dressed too fresh, as the fishmonger does by fish that has been kept too long. During the sultry summer months, it is almost impossible to preserve meat that is not either tough or tainted; the former is as improper as the latter, for the unbraced stomachs of relaxed valetudinarians, for whom, at this season, poultry, stews, &c., and vegetable soups, are the most suitable food, when the digestive organs are debilitated by the extreme heat, and profuse perspiration requires an increase of liquid to restore equilibrium in the constitution.—See *Meat to Carve.*

BUTCHER'S MEAT, DIVISION OF.—The butchers have a methodical way of cutting up an ox, a sheep, a lamb, and a calf; which are designated by certain terms, and which constitute their distinguishing marks: *e. g.*

a. Fore-quarter of an Ox.—This consists of the haunch, which includes the clod, marow-bone, shin, and the sticking-piece, which is the neck end. The next is the leg-of-mutton piece, which includes part of the breast-bone; then the chuck; the brisket; the fore-rib; and the middle-rib, which is called the chuck-rib.

b. The hind-quarter contains the sirloin and rump, the thin and thick flank, the veiny piece, and the *isch* *

* In the various works, ancient and modern, that have been elaborated upon the materials of the kitchen, their authors appear to have been totally ignorant of the derivation of this word, which has been tortured into so many erroneous shapes and forms. Isch-bone of beef is unquestionably the proper name—the word *isch* being derived from *Ischium*, the name of a bone of the pelvis, composing a part of the *Os innominatum* (nameless bone, because it appears that anatomists have been puzzled to find out any shape corresponding to it in the material world) of the adult, so called, because it is near the loin. It is rather a little singular, that this etymology did not strike the palate of the culinary censor-general, the late Dr. Kitchener, who vulgarily ycleps it, in common with Mother Glass, an H. bone; and the Dr. does not forget to tell us, without, however, deciding the question who is in the right, or *vice-versa*, that in "Mrs. Mason's Ladies' Assistant," this joint is called Haunch-bone; in "Henderson's Cookery," *Edge-bone;* in "Domestic Management," *Aitch-bone;* in "Reynold's Cookery," *Ische-bone* (the proper term); in Mrs. Lydia Fisher's "Prudent Housewife," *Ach-bone;* in Mrs. M'Iver's Cookery," *Hook-bone;* "I have also,"

(by some vulgarly and erroneously called the *atch*,or H. bone) or chuck bone, buttock, and leg. Besides the quarters, are the head, tongue, and palate. The entrails are the sweet-breads, kidneys, skirts, and tripe; of which there are the double, the roll, and the red tripe.

c. In a Sheep are the head and pluck, which include the liver, lights, heart, sweet-breads, and melt. The fore-quarter contains the neck, breast, and shoulder; and the hind-quarter the leg and loin. The two loins together are called a chine or saddle of mutton, which is a fine piece, when the mutton is small and fat.

d. In a Calf, the head and inward entrails are called the pluck (which contains the heart, liver, lights, nut), and melt, and which are called the skirts; the throat, sweet-bread, and the windpipe, sweet-bread, which is the finest. The fore-quarter comprises the shoulder, neck and breast; and the hind-quarter is the leg, which contains the knuckle and fillet, and loin.

e. House Lamb.—In a house lamb are the head and pluck, namely, the liver, lights, heart, nut and melt, and also the fry, which consists of the sweet-breads, lamb-stones, and skirts, with some of the liver. In the fore-quarter, is comprised the shoulder, neck, and breast. The hind-quarter is the leg and loin. This is in high season at Christmas, and lasts all the year.

f. Grass Lamb.—As above.

g. In a Hog, are the head and inwards, that is, the haslet, which consists of the liver, crow, kidney, and skirts; there are also the chitterlings and the guts, which are cleaned for sausages. The fore-quarter is the fore-loin and spring. If it be a large hog, you may cut off a spare-rib. The hind-quarter is only the leg and loin.

h. A Bacon Hog is cut differently on account of making hams, bacon, and pickled pork. Here you have fine spare-ribs, chines, griskins, and fat for hog's-lard. The liver and crow are much admired, fried with bacon, and the fat and ears are equally good soused.

BUTTER.—Butter is an unctuous substance, made by agitating the cream of milk in a churn, till the oil separates from the whey or serous parts. Some of our churns are heavy machines, and require great exertions of strength to work them; but Mr. Townsend observes, that in Spain, the women churn as they walk along, or stand chatting with a neighbour, each with a leathern bag, in which they shake the cream till the butter is completely formed.* In Barbary, butter is made by putting the milk or cream into a goatskin suspended from one side of the tent to the other, and pressing it to and fro in one uniform direction; and in Bengal, butter is easily made by the slight turning of a stick in milk.†

The trade in butter in England is very considerable; some compute that 50,000 tons are annually consumed in London only, within forty miles round which it is chiefly made. Fifty thousand firkins are said to be sent yearly from Cambridge and Suffolk alone, each firkin containing fifty-six pounds. A considerable part of this vast quantity is however brought from Downham, ten miles

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says Dr. K., "seen it spelt *Each-bone* and *Ridge-bone;* and we have also heard it called *Natch-bone.*" In Farley's Cookery, which, it would appear from the title page, went through twelve editions, if not more, it is also called *Isch-bone*, which unquestionable is the most proper, for the reasons above assigned. Mrs. Fisher's '*Ach-bone*' may have had its origin in the rheumatic affection or *ach* to which the ischium is subject, called the sciatica in all probability; and which Mrs. Reynolds may have experienced *in propria persona.*—Ed.

* Journey, vol. iv. p. 388.

† Shaw's Travels and Phil. Trans.

south from Lynn in Norfolk, to Cambridge, and thence conveyed by land carriage to London.

Uttoxeter in Staffordshire, is a market famous for good butter, insomuch that the London dealers have established a factory there for that article. It is bought by the pot, of a long cylindrical form, weighing 14lbs.; but no butter is esteemed equal to that which is made in the county of Essex, well known by the name of Epping butter.

It was long before the Greeks appear to have had any notion of butter; their poets make no mention of it, and yet are frequently speaking of milk and cheese. The Romans used butter no otherwise than as medicine, never as food. The ancient Jews, however, appear to have been acquainted with the method of preparing butter. Solomon, Isaiah, and even Moses, speak of it. The last represents it as in use in Abraham's time. (See Gen. xviii. 8; Prov. xxx. 33; and Isaiah vii. 15). But some modern writers suppose that by butter in these passages we are to understand cheese: while others maintain that, in Scripture, the word butter almost always denotes liquid cream. When we read of children of being fed with butter and honey, it means, say these commentators, cream and honey, which was very common in Palestine. Figuratively, it denotes plenty. See Job xx. 17, and xxix. 6.

BUTTER, Directions for Choosing.—In purchasing butter do not trust to the specimen given you to taste by the seller, lest he give you a taste of one lump and afterwards sell you another. In choosing salt butter, trust rather to your smell than taste, by putting a knife into it, and applying it to your nose. If the butter be in a cask, have it unhooped, and thrust in your knife between the staves, into the middle of it, for the top of the cask is sometimes better butter than the middle, owing to artful package.

BUTTER, To preserve.—The common method of preserving butter is by working an ounce or two of salt into each pound, until they be thoroughly incorporated. The best salt for this purpose is in large crystals, which should be thoroughly dried, and coarsely powdered.

*Dr. Anderson's Receipt.**—For the cure of butter, Dr. Anderson recommends a mixture of two parts of the best grey salt, one of sugar, and one of saltpetre, beat into fine powder; one ounce of this preparation is sufficient for a pound of butter. It is stated on the same authority, that butter cured in this way does not taste well till it has stood at least a fortnight after being salted, but that after that period, is has a rich marrowy taste, which no other butter ever acquires, and tastes so little salt, that one would imagine it would not keep; and Dr. Anderson has seen it perfectly sound and sweet when two years old.

Cause of Butter becoming Rancid.—It is principally from the milk, which is not entirely expressed from the butter, and in consequence of the albumen, which is constantly present, that it becomes rancid and spoils. These may, however, be separated by melting the butter, and keeping it over the fire until all the water be evaporated, when the albumen will also be coagulated, and sink to the bottom. And to guard against all risk of producing an empyreumatic taste,† the vessel containing the butter should not be exposed directly to the fire, but placed in a larger vessel filled with water, which is made to boil, forming, what chemists call, a water bath. While the butter remains fluid, it resembles a perfectly transparent oil, and, on cooling, it

* See—Anderson's Recreations, vol. iv. p. 87.

† The offensive smell and taste, that substances receive from being exposed to too much fire.

becomes opaque, and is firmer and a little paler than the butter before it was clarified. It will keep a considerable time without salt; but if it be salted, as common butter, it will continue sweet much longer in hot climates than if it had been cured in its original state. The natives of Hindostan never use butter, but prefer what is called *ghee*, because it keeps better, and has more taste and smell. Their butter is prepared from coagulated acid milk; and in order to collect a sufficient quantity, it is often kept two or three days, by which time it is highly rancid; it is melted in an earthen pot, and boiled till all the water be evaporated. After it is taken from the fire, a little coagulated acid milk and salt, or betel-leaf and reddle, are added. It is kept in pots, and eaten when even a year old.

The two frequent use of butter relaxes and debilitates the stomach, takes away the appetite, provokes nausea, and heats much, especially if it be old (*Lemery)*; though, for the most part, when moderately used, it agrees with any age or constitution, though those who have weak stomachs should use it abstemiously, as well as those of a hot and bilious constitution. Its good effects are nourishing and pectoral; it opens the body,and is of a dissolving and digesting nature. Butter is copiously used, and there is hardly any sauce made without it. The northen people use it very extensively, and consequently it is said that it is butter that makes them look so fresh and healthy. It contains much oil, and a little volatile salt.

BUTTER MILK.—This is milk which has been deprived of its oily matter, by churning or agitation. If made of sweet cream it is a delicious and most wholesome food; those who can relish sour butter-milk find it still more light; and it is reckoned more beneficial in consumptive cases. If not very sour, it is also as good as cream to eat with fruit, if sweetened with white sugar, and mixed with a very little milk. It does likewise equally for cakes and rice puddings: consequently, it is economical to churn before the cream is too stale for any thing but to feed pigs.

BUTTER-VEGETABLE.—Mungo Park, the celebrated African traveller, says, that the fruit of the shea-tree affords a vegetable butter, which, besides the advantage of its keeping the whole year without salt, is whiter, firmer, and, to his palate, of a richer flavour than the best butter he had ever tasted, made from cows' milk. These trees grow in great abundance in the kingdom of Bambarra, on the banks of the river Niger. Its fruit, from whose kernel, boiled in water, the butter is prepared, has somewhat the appearance of a Spanish olive.

M. Chevreul subjected the butter of cows' milk to examination, and found that 100 parts of fresh butter consist of

Pine Butter	. .	83.75
Butter Milk	. .	16.25

From numerous experiments he concludes, that there exists in the oil of butter at least two fluid substances, one of which is soluble in all proportions of cold alcohol. It does not possess acrid properties, and gives, by saponification, some sweet chemical principle, — butiric, caproic, capric, margaric, and oleic acids. M. Chevreul has given this oil the name of butyrine, because it contains the butiric acid (or its properties) to which butter owes its odour. The other fluid substance has the properties of the oleic.—*Annales de Chimie et de Physique.*

BUTYRINE.—Butter differs from the common animal fats, in containing a peculiar oleaginous matter, which is quite fluid at 70° Fahrenheit; and to which M. Chevreul has applied the name of butyrine. When converted into soap, it yields, in addition to the usual products, three volatile odoriferous compounds; namely, the butyric, caproic, and capric acids.

C.

CABBAGE, RED.—This is one of the most indigestible substances, particularly as eaten by the French and Germans, with ham and chestnuts; it is thus rendered heating, flatulent, and laxative, and contains no nourishment. More digestible, cooling, and less hurtful to the bowels, are the young sprigs of cauliflowers; but the most indigestible of all is the colewort. What has been said with respect to cabbage, is applicable also to the orach, or atriplex, and the lettuce, when boiled or stewed.

CABBAGE, WHITE. — White cabbage is possessed of excellent properties; it is less flatulent than the common greens, and being full of water, it is diuretic, and somewhat laxative. It is remarkable, that all herbs and plants, in general, are more or less flatulent, according to their digestibility, and are disposed to putrescency in proportion to the time they remain in the alimentary canal. —See *Sauer Kraut*.

The red cabbage is principally used for pickling; those which are close-leaved are the best. It is directed to be cut in quarters, and when the liquor boils to put in the cabbage, and give it a dozen warms; then make the pickle of white-wine vinegar and claret. Beet-root may be added to it, first boiled, and turnips half boiled, and these may be used to garnish dishes or salads. Cabbages are indifferent nourishment; though they are detersive, and heal wounds in the form of the cold raw leaf. Their first liquor, after boiling, is laxative; and the last, astringent. The red cabbage is more pectoral than the others. They are difficult of digestion, and produce flatulency in weak stomachs; they are, therefore, usually well boiled, and eaten with pepper, to facilitate their solution in the stomach, and obviate the inconvenience attributed to them. In a tender state, they agree with young people of a bilious and sanguine constitution; as soon, however, as it ceases to be tender, that is, when it becomes hard, they ought not to be eaten by persons of any age or constitution. Hippocrates caused cabbages to be boiled twice, and then prescribed them to be eaten by those who were troubled with gripes, bloody flux, or spitting of blood: by this process, cabbages were divested of their purging quality, and only the grosser parts left behind, which are more astringent,—according to the following line:—

> "Jus caulis solvit, cujus substantia stringit."

CACAO.—This, in fact, is only a weak chocolate, which, being less pure than the former, weak chocolate might be properly substituted for it. —See *Chocolate*.

The cacao, or chocolate-nut tree, is a native of America, but is cultivated in many of the West India Islands. It resembles a cherry-tree. The fruit is enclosed in a kind of pod, of the size and figure of a cucumber. Of this fruit, which consists of seeds, usually about thirty in number, with the addition of vanilla, and some other ingredients, the Spaniards, and, after their example, the rest of Europe, make a kind of conserve, or cake; which, diluted in hot water, makes that delicious, wholesome drink, called chocolate. It is likewise made into a sweetmeat; and there is an oil extracted from it, which has been reputed an extraordinary remedy in the cure of burns and scalds. The cacao-nuts are esteemed by the Mexicans as anodyne; and used, eaten raw, to assuage pains of the bowels. This statement refers to the cacao, or tree bearing the *small pods*; what follows, relates to the cacao-tree which bears the *large nuts*. This tree, it has been remarked, supplies the Indians with almost whatever they stand in need of. The bark of the nut is made into cordage, sails, and cloths; and the shell into drinking-bowls, cups, and other articles; the kernel affords a wholesome food; and the milk contained within the kernel a cooling liquor. The leaves are used for thatching houses, and wrought into baskets; and the body of the tree is converted into masts for ships, and employed for various other purposes. Indeed, from Lobo's Voyage, and other authors, (*see* Ray's Wisdom of God in the Creation, p. 207), we learn that a ship may be built, fitted out with masts, sails, and cordage, and victualled with bread, water, wine, sugar, vinegar, and oil, from the cacoa-tree.

CALICES, CAPUCHINS, CAPERS, and flowers of CRESSES, mix well with the colder salads; the buds, when candied, are also used as pot-herbs in winter.

CALUMBA.—The root of a plant growing in Southern Africa, supposed to be the Cocculus Palmatus. It has a disagreeable, somewhat pungent taste, and a light aromatic smell. It is a very pure bitter, is tonic and stomachic. It is extremely useful in cholera when the vomiting has stopped, and in the bilious vomiting of warm climates; also in bilious fever, diarrhœa, and habitual vomiting.—With gentle laxatives, it is employed in habitual costiveness; and has also been given with success in hypochondriasis, hysterics, heart-burn, vertigo, sudden blindness from nervous causes, colic, and indigestion:—

Take—

Powder of Columba, 2 drachms.
Boiling Water . 1 pint.

Macerate for six hours, and take a wine-glassful three or four times a day.—The tincture of Columba is a good preparation, and is given in doses from one to two drachms; the powder, from a scruple to half an ounce.

CALX.—In its primary sense, lime, or a sort of stone burnt in a kiln, in order to make mortar. In chemistry, a kind of ashes, or fine friable powder, which remains after a body has undergone the violence of fire for some time.

CAPERS.—Capers are the produce of a low shrub, which generally grows among rubbish, and out of the joints of old walls, and the fissures of rocks. Dr. Smollett observes, that this plant requires no culture. They are pickled, and brought to England annually from Italy and the Mediterranean; particularly from about Toulon in the south of France; from whence it is said, the greatest part of the capers throughout Europe are derived. In the island of Majorca, they grow wild, and form a lucrative subject of exportation to individuals. They are chiefly used in sauces, and sometimes in medicine, as being very aperient, and employed in certain compositions for diseases of the spleen. In England, broom-buds are frequently substituted for capers.

Capers are said to provoke women's terms, and are good in asthma, hypochondriasis, and visceral obstructions. They create an appetite, fortify the stomach, kill worms, and increase the seminal discharge. If used imimmoderately, they heat and rarify the fluids too much. They agree in cold weather with old people, of a cold, phlegmatic, and melancholy constitution.

Preserved capers are more used in sauces than for food. Their chief virtue consists in an essential oil which they contain. The green flowers of Spanish broom pickled as capers are often substituted for them.

Such as are green, tender, and well pickled, ought to be selected.

CAPON.—A cock castrated, to make him fatter, and his flesh more delicious and tender. The cock being a lascivious animal, but as the great heat of his body is destructive to his flavour, and causes his flesh to become rigid, dry, and difficult of digestion; it is little used at the tables of the great. A capon, on the contrary, which is not subject to the same heat as the cock, does not sustain the same loss; and thus the most spirituous and balsamic parts of his blood being retained, they contribute to give his flesh better juice and a higher flavour.

In choosing a capon, take that which is young, tender, fat, well fed, and bred in a pure and serene air. The flesh of capons is very nourishing, produces good juices, is restorative, recovers decayed strength, good in consumptive cases; especially the broth, which wonderfully strengthens and nourishes the sick and convalescent.

CAPSICUM.—Guinea pepper. A native of the East and West Indies; is in long, roundish, taper pods, divided into two or three cellsful of small whitish seeds: when fresh, it has a penetrating, acrid smell, and an acrid and very pungent taste, producing a painful burning in the mouth for some time after. A species of this pepper, but much smaller, is called in the West Indies, *bird pepper,* and is the basis of a powder brought from thence, called *cayenne* pepper. It is a very strong stimulant, and may be given in the same diseases as cinnamon, and other stimuli. It is also used to give an artificial strength to spirituous liquors, particularly British gin; as well as to give a pungent taste to weak beer; but, to avoid detection, the brewers mostly use the concentrated tinctures; and ginger, coriander seed, and orange-peel, are used to flavour it: besides these, opium, cocculus indicus, nux vomica, tobacco, and extract of poppies, are used to increase the intoxicating qualities.—See *Finings.*

CARP.—A fresh-water fish, and is met with in rivers, ponds, and marshes. In places where they can get food enough, they increase to a large size. Authors speak of carp in lakes, ten feet long. They feed on herbs, mud and slime, and breed fast. They live to a great age, which is proved by some monstrous carp found in ditches near towns. Gesner assures us, that he knew a man of good reputation, who affirmed to him, that he had seen a carp a hundred years old.

Carp is easy of digestion, and affords pretty good food and nourishment. Those caught in rivers are the best. They should be well fed, fat, and not too young for the table. The tongue of a carp is an Epicure's bit.

CARDAMOMS.—A dried pod with seeds, brought from Malabar, in the East Indies: the best comes from Armenia on the Bosphorus. The seeds freed from the husks, are a warm and grateful aromatic; they do not, like those of the pepper kind, immediately heat and inflame the bowels; hence they certainly deserve the preference for common use. The tincture of cardamoms is an excellent and useful preparation; an ounce of which to five of cinnamon-water is an excellent corrector of wind on the stomach.

Cardamom seeds should be kept with their husks, or they will lose a considerable portion of their virtues. They are frequently mixed with grains of paradise, which, though less aromatic in their flavour, are much hotter and more spicy.

CARRAWAYS.—Among all the native spices few excel in medicinal virtues the common carraway. They are warm and carminative, and have an agreeable smell. Proof spirit extracts all their virtues; the essential oil also contains all their properties. The powder may be given from twenty to thirty grains. The seeds are the mildest and most useful carminative we have. To people of a weak digestion, troubled with flatulency and colics, they afford the most certain relief, if used in sufficient quantity; for instance, a table spoonful at a time, early in the morning, and one hour before a meal: or still better, if the seeds are plentifully used in bread, and among cooked victuals. Those, however, of a hot and bilious constitution, likewise individuals liable to obstructions and habitual costiveness, ought to use some caution against using these seeds indiscriminately, and not without taking professional advice. Carraway seeds, finely pounded, with a small proportion of ginger and salt, spread upon bread and butter, and eaten every day, especially early in the morning, and at night before bedtime, are successfully used in Germany, as a domestic remedy against hysterics, and will doubtless effectually cure the disease, provided it does not arise from improper diet, obstructions of the intestines and other vessels, iliac, passion, bile, acrid humours, and the like; in all which cases the carraway and ginger will certainly do more harm than good; as each of them must be removed by opposite means. If, however, carraway be kept in a pounded state, for the purpose of overcoming the disposition to flatulency and indigestion, it soon turns rancid, and may prove hurtful on account of the strong oil it contains. The plant of carraway is one of the early spring-herbs, and makes an excellent addition to salads. The seeds, when distilled with ardent spirits, yield a very heating and pernicious oil, which renders such spirits still more detrimental to health, than when they are in a pure state.

Obs.—The seeds of carraway (*carum carui*) have also been used in brewing, but not so frequently as the coriander, which some believe to add strength as well as flavour. Carraway is found wild in England, and along with the coriander; it is cultivated in some counties for the use of confectioners and apothecaries.—See *Coriander*.

CARROTS.—Carrots are extremely flatulent, and therefore an improper food for the weak, and those inclined to acidity; by such individuals they can scarcely be digested, unless taken with the addition of spice, and a proper quantity of salt; by which means their fermentation and corruption in the stomach will be in a great measure prevented. In other respects, they contain a good and copious alimentary fluid, at the same time powerfully affect the kidneys, and are likewise anthelmintic, or destructive of worms. From the quantity of saccharine matter it contains, the carrot is very nutritive and slightly laxative; it also possesses a large proportion of fibrous matter, which in some stomachs prevents the digestion of the root, and it passes through the bowels with but little change; to obviate this effect, it ought to be thoroughly boiled, and it should be eaten when young. The carrot appears to have been introduced into England by the Flemings, in the reign of Elizabeth.

The seeds of the wild carrot are diuretic and aromatic: in strong infusions in calculous complaints, they have, however, yielded to more efficacious remedies. The root of the garden carrot forms an excellent poultice to ill-conditioned and fœtid ulcers.

CARVING. Table Dissection.—A carver is one who performs the honours of the table, and distributes the different viands, with address and expedition. The art of carving formerly constituted the integral of a good education, and in the old school there were carving masters as common as dancing masters. In this respect the Germans are very superior knife-men. With them, it is the butler who carves. He removes each piece as soon as it appears, and returns it dissected in the most masterly manner. It then goes round the table, and each serves himself according to his rank or taste. It will be seen by the following curious extract from treatises printed by the famous Wynkyn de Worde, that the art of carving was not neglected by our ancestors, and that table dissection was then reduced to a science, with as much precision and elegance as it is at the present day. The first treatise is called 'The Boke of Kerving,' and proves that the pleasures of the table must have been highly valued, when so pointed an attention was paid to their minutiæ. The extract is here given verbatim as it stands, orthographically.

'The termes of a kerver be here as follow:—

Breke that deer.
Lesche that brawn.
Lyste that swan.
Rere that goose.
Sauce that capon.
Spoil that hen.
Truche that chekyn.
Unbrace that mallard.
Unlace that conye.
Disfygure that peacocke.
Unjoint that byterne.
Untacke that curlewe.
Allay that fesaunde.
Wynge that patryche.
Wynge that quaile.
Mynce that plover.
Thye that pygon.
Border that paste.
Thye that woodcocke.
Thye all maner of small birds.
Tymbre that fyre.
Tyre that egge.
Chynne that salmon.
Strynge that lamproye.
Splat that pyke.
Sauce that plaice.
——— tenche
Splay that breme.
Syde that haddock.
Tuske that barbell.
Calpin that troute.
Tyne that chever.
Trassene that ele.
Tresme that sturgeon.
Under-haunch that porpus.
Tayme that crabbe.
Barbe that lobster.

Here endeth the goodly termes of kerving.'

See Meat, Fish, Poultry, different joints of, to carve.

In the days of yore, "*Le grand Ecuyer tranchant*," or the Master Cook, was the next officer of the mouth in rank to the "*Maitre d'Hotel*," and the technical terms of his art were as singular as any of those which ornament "Grose's Classical Slang Dictionary," or the "Gipsies' Gibberish:" the only one of these old phrases now in common use is "cut up the turkey;"—we are no longer desired "to disfigure a peacock"—"unbrace a duck," &c. See *Instructions for the Officer's Mouth*, by Rose, 1682.

Ceremony does not in any thing more commonly and more completely triumph over comfort, than in the administration of the honours of the table. It is seldom understood by those who deal out the loaves and fishes, that he is the best carver who serves the greatest number of guests in the least portion of time. To effect this (according to the maxims of the late Dr. Kitchener), the best way will be to fill the plates and send them round, instead of asking each individual if they choose soup, fish, &c., or what particular part they prefer, for as they cannot all be choosers, you will thus escape making any invidious distinctions.—*Cook's Oracle*, p. 41.

A dexterous carver, especially if he be possessed with that determined enemy to ceremony and sauce—a keen appetite, will help half a dozen people in half the time one of your would-be-thought folks wastes in making civil faces, &c. to a single guest. It would save a great deal of time, &c., if poultry, especially large turkeys and geese, were sent to table ready cut up. Fish that is fried, should be previously divided into such portions as are fit to help at table. A prudent carver will cut fair; and observe an equitable distribution of the dainties he is serving out, and regulate his helps, by the proportion which his dish bears to the number he has to divide it amongst—taking into the reckoning the *quantum* of appetite the several guests are presumed to possess.

" Study their geniuses, caprices, *gout*—
They, in their turn, may haply study you :
Some wish a pinion—some prefer a leg ;
Some for a merry-thought, or side-bone beg ;
The wings of fowls—then slices of the round—
The trail of woodcock—of cod-fish the sound.
Let strict impartiality preside—
Nor freak, nor favour, nor affection guide."—*From the* BANQUET.

CASSIA.—Though the bark of cassia resembles that of cinnamon in taste, it is much less heating, and certainly more beneficial for common use than the latter, which is better adapted to medicinal purposes. The bark of cassia is thicker and coarser; it breaks short and smooth, while the cinnamon breaks fibrous and in splinters. The pulp of the *cassia fistularis*, or cassia of the cane, is a gentle aperient and nutrient in fevers, and is useful where stronger purgatives might be injurious.

CAULIFLOWERS.— See *Cabbage, Red; and Vegetables, Introduction of.*

CELERY.—Celery is one of the most fragrant roots we possess in this climate, though its shoots and leaves are more commonly used for salads than the root itself.

There are two species of celery known among gardeners, both of which are estimable : one produces thick knobby roots, not unlike the size and figure of a short pine-apple; and the other has a variety of small white, tender, and odorous roots. The latter species is more common in this country, while the former is much esteemed in France and Germany, where it is eaten in thin slices, previously soaked in vinegar; a preparation which, in summer, affords a cooling and wholesome dish. In a raw state, celery is digested with some difficulty, which may be removed by boiling it in water, or soaking it as before observed, for a short time, in vinegar. The Germans prepare an artificial coffee from this root, by cutting it into small square pieces, which are dried and roasted in the usual manner. This kind of coffee has been recommended, particularly to nurses and lying-in women, as a wholesome substitute for either tea, or a real coffee.

Mr. John Anderson, gardener to the Earl of Essex, at Cassiobury, communicated a few years ago, in a letter to the secretary of the Horticultural Society, his method of growing early celery. He forms in the ground a trench, six feet wide, and one foot deep; into this he puts six inches of rotten dung, mixed with a little road dirt, and mixes the compost well with the soil by digging it together. The celery is then planted in cross rows, six inches apart, and eighteen inches from row to row ; as the plants advance, they are earthed across the trench. By this means a much larger quantity of celery can be grown in the same space of ground than in the usual way ; but the method is only applicable to early celery, for late crops so grown, would be liable to rot and perish.—*Transact. of Hort. Society*, vol. v. p. 492.

CHAMOMILE. — A perennial plant, indigenous in the south of England, but cultivated in our gardens for medicinal purposes.

The flowers of chamomile are useful in indigestion, gout, green sickness, flatulent colic, and chronic weakness of the stomach and bowels. In these cases they are best given in the form of a cold infusion, or tea, in combination with ginger and carbonate of soda. The warm strong infusion is emetic. The extract of chamomile flowers is an excellent stomachic, possessing little stimulus and favouring the natural action of the bowels, and is therefore a convenient and useful addition to other tonics which we wish to give in the form of pills, as preparations of iron, ipecacuan, carbonate of soda. The weak infusion of the flower greatly assists the action of emetics; and a wine-glass of a strong infusion drank in the morning, promotes digestion, and strengthens the stomach and bowels. The flowers are also used in fomentations.

CHAMPAIGN. — A wine, the produce of a province in the south of France of the same name.

Though one of the most delicious wines, champaign ought to be indulged in with great precaution. The piquancy of the flavour, the racy tartness, and the sparkling brilliancy, are all dependent on the presence of an acid, which, if not obviated, is productive of deleterious consequences. The alcohol or spirit it contains, is, though little more than half the strength of port or Madeira, perhaps somewhat peculiar in exciting the stomach by its stimulus to greater action than it can well bear. The consequence, therefore, of excessive indulgence in this delightful and sparkling wine, is, that the stomach is fatigued with its bright and airy spirit, and actually over-delighted into weariness. It is not, therefore, to be wondered at, that champaign should, in such cases, bring on a fit of the gout, dispose to apoplexy, intolerable head-aches, cramp in the stomach, concretions in the gall bladder, &c. with all the accompaniments of deranged digestion. "The heating, exciting, and certainly injurious qualities of champaign, with regard to gout, are much more remarkable than are found from any other liquor" (*Scudamore on Gout*). If then it has a tendency to bring on a first attack of gout, it need not be wondered that it is a ready occasional cause, in producing a return of this relentless disorder. The habitual indulgence of wines of this sort produces effects which are more lasting and severe, in proportion as it can be continued without inducing a paroxysm of the gout. Those who are desirous of enjoying their champaign without participating in its consequent evils, should add to it a few grains of magnesia, carbonate of soda, or spirit of hartshorn; and although the alkali may injure its tartness and piquancy, it will obviate the bad effects; but to save the flavour which is so exquisite with the amateurs of this rich drink, a little magnesia may be taken a few hours afterwards in a separate form.—See *French Wines*.

CHAMPIGNONS.—See Mushrooms.

CHARCOAL. — Charcoal varies in its qualities, according to the wood from which it is prepared: that of the soft woods, as the willow, alder, &c., well burned, is best for crayons, for making gunpowder, and for clarifying liquids; that of the harder woods is used for fuel, or for a support to substances exposed to the flame of a blow-pipe. Charcoal pulverized is used as a tooth powder; and in poultices to correct fœtid ulcers; that of the areca-nut is the most fashionable dentifrice. (See Water, Purification of). The charcoal of the holly, if the bark be left on, is supposed to render iron brittle when worked by a fire made of it. From the experiments of Lowitz, and others, charcoal is now well known to be the most powerful corrector of putridity, next, perhaps, to the gastric juice, out of the stomach; hence we are able to account for the success with which it has been occasionally employed as an internal medicine on the Continent: the dose may be from half a scruple to a scruple, repeated three or four times a day.

CHEEKS, HOG'S.—These used

to be soused in some liquor and fried; they are not nutritious, and from their clammy and glutinous nature, are difficult of digestion. Equally so are the external parts of the same animal, as the ears and feet, hence they require to be fried with onions, and mustard eaten with them as a condiment.

CHEESE.—One of the products of milk, and is made by pressing the curd of the latter, and suffering the mass to dry. Milk is coagulated by runnet, or rennet, a liquor made by steeping the maw or stomach of a calf in warm water, in which spices and aromatics have been previously infused. Bacon observes that the milk of the pig has the quality of rennet.—See *Milk*.

The pig's prest juice, infused in cream,
To curds coagulates the liquid stream.
POPE.

The too frequent use of cheese is condemned by physicians, who maintain that it is a food fit only for labourers, or those whose organs of digestion are strong. In England, cheese is made entirely from the milk of cows; but in some places they make it of ewe's milk; and in others a certain proportion of ewe's milk, or that of goats' is added to the cows'. The Laplanders make a sort of cheese of the milk of the rein-deer. England has long been noted for the excellency of its cheese. Camden and others suppose, that we learned the art of making it from the Romans. Chedder, in Somersetshire, and Stilton, in Huntingdonshire, are famed for an exquisite sort; the latter being usually called the *Parmessan* of England. Parma, in the north of Italy, is renowned through all Europe for its excellent cheese, as our well known ballads bear testimony: "Let Lodi or Parmassan bring up the rear." Much of the cheese called *Stilton cheese*, is made in the neighbouring counties. The counties of Wilts, Gloucester, Warwick, and Cheshire, make immense quantities of cheese. From this last county Chester alone is said to export annually 22,000 tons—14,000 of which are sent to London. The average annual produce from one animal in Cheshire is stated at 300lbs. The most common size of each cheese is sixty pounds; a weight susceptible of every excellence to be found in the cheese of this country; but some weigh 140lbs. And in May, 1792, Mr. Heath, a farmer near Nantwich, a place situated in a luxuriant vale on the banks of the Weaver, made a cheese that weighed 192lbs. which measured two feet four inches over, and twelve in thickness. It was intended as a present for his late Majesty George III. The colouring of cheese should be done with arnotto; but, in consequence of the dearness of this article, an adulterated substitute is very commonly used.

The following places are also noted on account of their cheese: Cottenham, near Cambridge; Banbury, in Oxfordshire; Dunlop, in Ayrshire, Scotland; Gruyers in the Canton of Fribourg, Switzerland; Edam, north of Amsterdam in Holland; Gex, in the department of Aisne; and Meux, in the department of Seine and Marne, France. The cheese of the last-mentioned place is known by the appellation of "Fromage de Brie;" a district in the environs of Meux, noted for its excellent pasturage, called Brie.

All cheese is difficult to be digested, being the coarsest and most glutinous part of the milk, which the healthy and laborious only can concoct. To others, it is too heavy; it imparts a thick and acrid chyle to the blood; it hardens in a weak stomach, and accumulates in an indurated earthy lump. When eaten new in any considerable quantity, it corrupts the fluids; and if old it becomes putrid. Ale is the best beverage that can be used with it, when it is eaten in great quantities at a time. In small quantities after dinner, it can do no great harm; but it is absurd to suppose that it assists digestion—its effects at best being of a negative kind, that is, by acting as a temporary stimulant on the stomach; and even this is the case only with sound old cheese, which is neither too fat nor too far advanced in the process of putrefaction.

To show the strongly viscid quality of cheese, and the power of digestion it must require to assimilate it to our fluids, the following composition is adduced, as the strongest cement hitherto imagined, for mending china cups, glasses, and the like:—Take a piece of Cheshire or Gloucester cheese, and boil it in three or four different waters, till it forms a soft and elastic mass, freed of the whey and other extraneous ingredients. After having expressed all the water from this mass, and while yet warm, it must be gradually rubbed upon a piece of marble, such as is used by colourmen; and as much unslacked or quick lime, in powder, added, as will be absorbed by the cheese without making it too hard. This compound forms the strongest possible cement; and if allowed to dry gradually, it is able to withstand fire as well as water.

Toasted cheese, though more agreeable to some palates than in its crude state, is yet still more indigestible. Cheese, if too much salted, like that of the Dutch, acquires, when old, a pernicious acrimony. The green cheese of Switzerland, which is mixed with the powder of the wild mellilot, and the milder sage cheeses prepared in England, are almost the only kind that may be eaten without injury; and even these should be used in moderation by weak stomachs. Independent, however, of every objection advanced against the digestibility of cheese, it constitutes a prevailing article of substantial food among the labouring classes, by whom it is often consumed in great quantities, without the least inconvenience.

To Choose Cheese.—The coat of the cheese should be carefully examined before it is purchased; for, if it be old, with a rough and ragged coat, or dry at top, you may expect to find little worms or mites in it. If it be moist, spongy, or full of holes, it will give room to suspect that it is maggotty. Whenever any perished parts are perceived on the outside, be sure to probe to the bottom of them; for though the hole in the coat be but small, the perished part within may turn out to go to a considerable extent.

CHEMISTRY, ANIMAL.—This branch of chemical science embraces all distinct compounds derived from the bodies of animals; and are called proximate animal principles. These substances are distinguished from inorganic matter by the characters which belong to the latter, namely, inorganic chemistry includes the doctrine of affinity, and the laws of combination, together with the chemical history of all the elementary principles hitherto discovered, and of those compound bodies which are not the product of organization. The principles which serve to distinguish *proximate animal principles* from vegetable matter, are the presence of nitrogen in the former, their strong tendency to putrefy, and the highly offensive products to which their spontaneous decomposition gives rise. It should, however, be remembered, that nitrogen is likewise a constituent of many vegetable substances. Though few of these, the vegeto-animal excepted, are prone to submit to the process of putrefactive fermentation, it is equally remarkable, that there are compounds of animal origin, such as chlorestine and the oils, which do not contain nitrogen as one of their elements, still they are not disposed to putrefy.

The essential constituents of animal compounds are—

Carbon,	Nitrogen,
Hydrogen,	Oxygen.

Some of them also contain phosphorus, iron, sulphur, and earthy and saline matters, in small quantity. All the proximate animal principles contain a large quantity of carbon, and their hydrogen is in such proportion as to convert all their oxygen into water, and their nitrogen into ammonia.—See *Albumen, Fibrin, Gelatine, Sugar of Diabetes, Sugar of Milk,* &c.

CHERRIES. — This well-known fruit formerly grew spontaneously in the woods near Cerasus, a city of Pontus, on the southern coast of the Black Sea. Miller enumerates only five species of cherries; and from these, modern botanists assure us, the great varieties cultivated in the English gardens are derived.

Cherries are divided into the aqueous sweet, the aqueous acid, and the dry pulpous kinds. The Spanish cherries are the most difficult to digest, but are also the most nourishing. The aqueous sweet kind, as our early common cherries, are unwholesome, because their juice easily ferments, and occasions colics and diarrhœa. The watery acid sort are the best of any; their juice strengthens the stomach, purifies the blood, and is the least flatulent.

Dried cherries are, in many diseases, an excellent article of diet, on account of their cooling and antiseptic properties. To swallow cherry stones, however, is highly pernicious, as they have sometimes been found to accumulate in the intestines, to form lumps cemented together by viscid phlegm, and thus to produce the most violent and fatal symptoms. They are excellent in scurvy, putrid fevers, and dysentry; they correct the blood, when inclined to putrescency, and by their saponaceous or melliferous juice, they powerfully resolve obstructions in the intestines. Those who use them with this intention, may eat them at any time of the day, though they operate most effectually in the morning, on an empty stomach. But even the sweet species contain a stimulating acid, which, in proportion to their juicy consistence, disagrees more or less with the weak and debilitated; for this sap or juice easily foments in the stomach, and produces flatulency, diarrhœa, and acidity. On account of these peculiar effects, persons whose stomachs are bilious and vitiated, who are troubled with putrid eructation, and an offensive breath, ought to eat them freely, to counteract the disposition to putridity.

CHERRY LAUREL. — The *cerassus lauracerasus* of Lois, is originally a native of Trebizond, but is cultivated very commonly in this country, reaches to a very considerable size, and produces ripe fruit, which is eaten greedily by the birds. Its leaves are evergreen. When recent and entire they have no smell; but on being burned they have a strong kernel smell, and a slightly styptic and intensely bitter taste. When dried they lose their colour, and become almost insipid. In their recent state they have been long known to possess deleterious properties, and Bergius obtained a volatile oil from them. Schreder, in 1802, shewed that they contained hydrocyanic acid. The oil is very analogous to that of bitter almonds, and is sold under its name for the use of perfumers and rectifiers, who imitate with it the liquor called *Noyeau.* The recent leaves are also boiled in cream, to give it the flavour of *Ratafia:* but on some persons the smallest quantity acts unpleasantly, producing an eruption of the skin called urticaria, or nettle-rash. A water is distilled from the recent leaves, which is used medicinally as a substisute for hydrocyanic or prussic acid, and seems in many respects preferable, as being not only less liable to decomposition, but less dangerous.

CHESTNUTS.—Nuts are generally supposed to have constituted the earliest food of mankind; and, in some countries, they still supply a considerable source of food. In this country they are principally known as an article of the dessert, although occasionally eaten with our food: they are made a favourite accompaniment with turkey; though dispeptics should be extremely guarded in their use. Dr. Paris gives a case which, while on this subject, is worthy of being here recorded. "I was lately desired to see a person who, after such a repast, was seized with violent pain in the region of the duodenum, accompanied with distressing retching. I instantly suspected the cause, and the appearance of the stools, which were produced, confirmed my supposition. The chestnuts had swelled in the intestines, and produced an obstruction, probably at that part of the duodenum where it makes its exit through the ring of the mysentery; or they might have lodged in the stomach, and produced an irritation upon the pylorus."—See *Treatise on Diet*, &c. p. 252.

The chestnut, as regards its composition, may be considered as more closely allied to the pulse than the nut tribe, since it affords no oil by expression; and from its farinaceous qualities it may even be made into bread, although it is heavy and indigestible. Its nutritive power must be considerable, since it forms the chief food of the lower orders in the plains of Lombardy; and an opinion has prevailed that the chestnut was the acorn so frequently mentioned in ancient history. When eaten after dinner, the chestnut ought to be roasted; but even in this state it is only fit for strong and robust stomachs and constitutions. Its digestibility is also increased by being kept for some time after it has been gathered. It is at the same time rendered thus more palatable by the evolution of its saccharine property. The evils which may arise from the use of this nut are still more likely to ensue after the ingestion of nuts, for they are then more oily, as well as more viscid and glutinous — when eaten they should invariably be accompanied with salt, though it would be a wise plan to banish them entirely from our tables. There is, however, a fascination in nuts which cannot always be resisted, and which leads a person, who once begins to eat them, to take such a quantity that the best stomach cannot bear with impunity. It is observed by Hoffman, that bowel complaints are always more prevalent in those years in which the nut-harvest is more plentiful.

CHLORESTINE.—A name applied by a French chemist (M. Chevreul), to the crystalline matter, which constitutes the basis of most of the biliary concretions formed in the human subject. It has lately been detected in the bile of man, and in several of the lower animals, as the ox, dog, pig, and bear. This interesting discovery was made about the same time, by Chevreul, in Paris, and by Tiedemann and Gmelin, in Heidelberg. M. Lassaigne has likewise found it in the biliary calculi of a pig. *Ann. de Chimiè et de Pharm.* vol. xxxi. "MM. Pelletier and Caventou, have obtained a new acid from chlorestine, or the pearly substance of human biliary calculi discovered by Poulletier-de-Laselle, and named by Chevreul. Chlorestine is to be heated with its weight of strong nitric acid, until it cease to give off nitrous acid gas. A yellow substance separates on cooling, scarcely soluble in water, and which, when well washed, is pure chloresteric acid."—*Journal of Science.*

CHOCOLATE.—A well-known article of diet prepared from the cocoa-nut, highly nourishing, particularly when boiled with eggs and milk. It is frequently recommended as a restorative, in cases of emaciation and consumption. It is more nourishing and less heating than coffee. It is commonly made too thick; but when of a proper degree of strength, it is a very palatable and wholesome beverage, though, on account of its oily quality, it proves oppressive and clogging to some stomachs.

When boiled with milk and eggs, chocolate is extremely nourishing: but the spices with which it is mixed, such as cinnamon, cloves, musk, vanilla, and the like, make it more heating and less wholesome. Vanilla, which is always found in Spanish chocolate, is an extremely volatile and pungent aromatic; even its flavour is insupportable to hysterical and hypochondriacal persons; it occasions violent head-ache, trembling, giddiness, and other symptoms, occurring in these complaints. The common chocolate prepared with eggs, sugar, milk, and water, is the most nutritive and wholesome; but a too frequent and immoderate use of it is always hurtful, particularly to the individuals before alluded to, as the cacao is too fat and indigestible to them, and creates a false or forced appetite. Cacao, of itself, is less heating and lighter than if made into chocolate, but it is not so nourishing. The immoderate use of this oily beverage, is apt to induce a febrile state in young people, and to supply the sedentary with superfluous nourishment; while, like coffee, it frequently brings on a state of irritability and uneasiness.

To the corpulent and weak, chocolate is improper; and if they be immoderate eaters, it induces inflammatory diseases and apoplexies. It also disagrees with persons much employed in mental pursuits; and those who imagine that it will supply their losses, sustained by nocturnal debaucheries of whatever kind, will find themselves disappointed in their hopes. By continually drinking chocolate, and using other nutritive substances, they will, indeed, be stimulated to new irregularities, but eventually at the expense of their palsied nerves, and their broken frame. In children threatened with a wasting, or spinal consumption, as likewise in some of the complaints of the lungs in the adult state; chocolate, with a sufficient quantity of milk, may have a beneficial effect; but, even in these cases, a strong decoction of roasted oatmeal in milk, with a small addition of chocolate, is much better calculated to promote a return of health.—See *Cacao.*

CHYLE.—In the animal economy, the word chyle, derived from the Greek, implies a milky fluid, extracted from dissolved aliments of every kind, and conveyed to the blood, through the medium of the lymphaties and thoracic duct. The aliment having been reduced to chyme in the stomach, is propelled into the duodenum (see *Intestines*) where it is converted partly into chyle, which is absorbed into the system from the small intestines, and partly into a residual matter, that assumes the nature of fæces in the large intestines, and is ultimately rejected from the system. As it is into the duodenum that the biliary and pancreatic ducts discharge their respective fluids, chylification is generally presumed to be essentially connected with the action of the bile and the pancreatic liquor. (See *Chyme*). So far as the organ of the stomach is concerned in the digestive function, we have some insight into the process. But beyond this, namely, of the nature of chylification, we have little or no knowledge that can be depended upon.—See *Bile, Digestion, Gastric Juice, Stomach,* &c.

CHYLIFICATION.—The act of turning into chyle.—See *Chyle.*

CHYME.—The residual alimentary matter ejected per anum. The process of chymification is as follows:—The food having undergone a sufficient degree of mastication and maceration, or other mechanical process, by which it is reduced to a state of sufficiently minute division, it is acted upon by the gastric juice and the peristaltic contractions of the stomach, and the result is a complete change in its properties—its conversion into chyme; an alteration in every respect analogous to a chemical change. During the process of chymification, heat is occasionally extracted, and not unfrequently gas is evolved. Dr. Bostock, however, regards these not as necessary steps in the process, but rather as the consequence of a morbid state of the function. Antecedent to Dr. Prout's experiments, the generation of acid in the stomach used to be considered in the same point of view; but these lead us now to believe it to be essential to the formation of chyme.—*Elem. Syst. of Physiology*, vol. ii. p. 491.

Chyme is not always of an uniform quality; as its properties are very much dependent upon the nature of the food. According to recent experiments made on dogs and horses, it appears that liquid albumen forms, under the natural process of digestion, a homogeneous fluid, in which the albumen remains quite unaltered; and this sort of chyme passes the pylorus much more rapidly than any other. Coagulated albumen is also much more slowly dissolved, and the fluid produced possesses the properties of coagulated albumen dissolved in acetic acid. Fibrin and vegetable gluten undergo a similar change. Gelatine is converted into a clear brownish fluid, in which neither gelatine nor albumen can be discovered. White cheese forms an opaque dirty-white fluid, containing much animal matter, which, however, is neither the case with gelatine nor albumen. Starch is gradually dissolved, and loses its re-action with iodine, being converted into sugar and amodine. The results obtained with compound articles of food, such as milk, beef, bread, and oats, in various states of mixture, were such as the foregoing facts would lead one to anticipate. The result of bones, was a liquid containing not only animal matter, but also a large quantity of lime. The conclusive result is, that all the animal principles, except liquid albumen, undergo a material change during chymification, which change generally consists in their being made to approximate closer in their nature to albumen.—See *Edinburgh Medical and Surgical Journal*, No. 93, p. 358, *on the writings of MM. Leuret and Lassaigne, and of Tiedemann and Gmelin.*—See also the word *Chyle*, *Gastric Juice*, &c.

Chyme, whatever may be the alimentary substance introduced, presents the invariable property of reddening paper coloured with tournsal, and it has always a sharp odour and taste.

CHYMIFICATION.—Turning into chyme.—See *Chyme*.

The period necessary for chymification to take place, must vary according to the nature and volume of the food, the degree of mastication and insalivation it may previously have undergone, and the degree of vital energy possessed by the stomach. Fat, tendon, cartilage, coagulated albumen, mucilaginous, and saccharine vegetable matter, resist the action of the stomach longer than fibrinous and glutinous substances. (*Magendie*). In the formation of chyme, the following considerations must be borne in mind:—1st. The circumstances under which the aliment contained in the stomach is found; and, 2d. The chemical nature of these substances.—See *Magendie's Physiology*; Forsyth's Translation.

CINNAMON.—The bark, (but not the external one, for there is a thin epidermis) of the Laurus Cinnamomum of Linnæus, growing abundantly in the island of Ceylon. It contains a fine essential oil, which renders it a high stimulant; the oil is so pungent, as to be like the actual cautery to the tongue; one drop of it, to a pint of water, warms the stomach, but it is extremely volatile, and much of its strength is lost before it reaches this country. It is unquestionably a most delicate spice, though it is seldom obtained pure from the mercenary Dutch, who were accustomed to send us more cassia than real cinnamon.—See *Cassia*.

Cinnamon, when imported, does not contain more than one hundredth part of its essential oil, and becomes one of our mildest aromatics; it breaks short, not fibrous; chewed, it emits a fragrant odour. The leaves of it are aromatic as well as the bark. Cassia can hardly be distinguished from it by the eye. It is a singular fact, that cassia gives no essential oil by distillation, though it is stimulant to the mouth and stomach, and impregnates water, which shews that it must contain some portion.

Cinnamon excites the stomach to stronger action by stimulating its mucous membrane, and causing an increased secretion of gastric juice; it prevents vomiting and colic, and is usefully employed with bark and other tonics in indigestion; in nervous languor, syncope, and hysterics, it is useful; from fifteen grains to thirty for a dose. Three drops to four of the oil of cinnamon, diluted, relieves the atonic and retrocedent gout, like opium and brandy, but the last are best. The compound tincture of cinnamon is a very elegant preparation; it is useful in nervous languor, flatulence, and a disposition to cramp, and in gouty pains of the stomach.

CITRON.—See *Lemon*.

CLARET. — Claret, or clairet (pale-red) is a name given by our neighbours the French to such of their red wines as are not of a deep or high colour. The word itself is a diminutive of *clair*, bright or transparent. Lord Chesterfield, in his celebrated 'Letters to his Son,' informs him, that claret comes from Bourdeaux; a testimony confirmed by the authors of the 'Encyclopœdia Britannica,' who say that the country adjacent to this city, not only produces the finest clarets, but at the season of the vintage, forms one of the most delicious landscapes in the world. Mr. Townsend observes, that a generous wine, produced near Alcala in Spain, is much used for enriching the poorer wines in the neighbourhood of Bourdeaux, for the purpose of making claret. — *Journey*, vol. iii., p. 302.

CLOVES. — The ripe fruit, or perhaps the cups of the unopened flowers of a bay-like tree, growing in the Molucca islands. Their properties are stimulant and aromatic; have a strong but agreeable smell, a bitterish hot pungent taste, and are one of the hottest, most pungent, and acrid articles of the aromatic class. They are stimulant and aphrodisiac, are useful in torpor and cramp of the stomach, and in flatulent colic. They enter our culinary spices; are remarkably disposed to imbibe humidity; and when their essential oil is extracted from them, which the Dutch frequently do, and then mix them with others that have not had it extracted, they readily imbibe from the latter a considerable share both of taste and smell; but their dryness, less pungent odour, and pale colour, discover the fraud. A small quantity of the essential oil dropped on lint, and applied to the hollow of a tooth, relieves the tooth-ach.

To make a tincture of cloves and mace.—*Take*, cloves bruised, three ounces, apothecaries' weight; brandy one quart. Let it steep ten days, and strain through a flannel sieve. It is excellent to flavour bishop or mulled wine.—See *Cordials*.

COCCULUS INDICUS. — The

fruit of the *Menispermum Cocculus*, better known by the names of India-berry and Cocculus Indicus. Its importation into this country from the East Indies is very great, considering that few know the purpose for which it is principally used: for, though the *cisampelos paneira* (which many botanists state to be the same plant), has a place in the Pharmacopœias, its virtues are generally referred to the root, and that root is brought from America.

That cocculus indicus is a strong narcotic, is unquestionable; and it is to this property alone that it preserves its place in the brewery. In India, the berries are thrown into the water for the purpose of catching fish, which by swallowing them become intoxicated. They were once used here in the same way; but the practice, we believe, is now prohibited. The extensive use of this ingredient was proved to a Committee of the House of Commons in 1818. Those who give brewing receipts, recommend it in quantities of four pounds to twenty barrels, boiled with the worts: but there appears to be a mystery on this subject, which demands investigation.—See *Nux Vomica*.

COCK.—The flesh of the cock is not so nourishing as that of a capon, (see *Capon*); and his flesh is more rigid and difficult of digestion: broth is made of the cock's flesh, and for this purpose the oldest is always chosen. This broth is of an opening and detersive nature; is mildly aperient, and is reckoned both nutritive and restorative. Some of the ancient physicians say that the genitals of this bird, especially when young, are good for lean and emaciated persons, and that they generate the seminal fluid: that brains are good in diarrhœa: they also considered the gall of a cock to be good in some cases of diseased eyes, as well as to remove spots and freckles on the skin — Cocks-combs are delicate eating, and a highly prized epicurean dish, and claim an elevated place among

"The heads of parrots, tongues of nightingales,
The brains of peacocks and of ostriches, &c."

COD.—A sea-fish, caught in great plenty on the banks of Newfoundland, Dogger-Bank, &c.—See *Fish*.

Cod generally comes into good season in October, when, if the weather is cold, it eats as fine as at any time of the year; towards the latter end of January and February, and part of March, they are mostly poor; but the latter end of March, April, and May, they are generally particularly fine; having shot their spawn, they come in fine order. The Dogger-Bank cod are the most esteemed, as they generally cut in fine large flakes; the north-country cod, which are caught off the Orkney isles, are generally stringy, or what is commonly called *woolly*, and sell at a very inferior price, but are caught in much greater abundance than the Dogger cod. The cod are all caught with hook, and brought alive in well-boats to the London markets. The cod cured on the Dogger-Bank is remarkably fine, and seldom cured above two or three weeks before brought to market; the barrel cod is commonly cured on the coast of Scotland and Yorkshire. There is a great deal of inferior cured salt fish brought from Newfoundland and Ireland.

"The skull of a Dogger-Bank cod is one of those concatenations of *tit-bits*, which some epicures are so fond of either baked or boiled: it is composed of lots of pretty playthings, or other such finery, but it will not do for those who want a good meal: it may be bought for about two shillings. Either boil it whole or cut it into pieces —flour and dry them, and then egg and crumb, and fry them; or stew it. —The tail of a codfish cut in fillets, or slices, and fried, makes a good dish, and is generally to be bought at a very reasonable rate; if boiled, it is soft and watery. The skull and tail of a cod is a favourite and excellent Scotch dish, stewed and served up with anchovy or oyster sauce, with the liquor it is boiled, in a tureen.—See *The Cook's Cookery*.

Ling is brought to the London market in the same manner as cod, but it is very inferior to it, either fresh or salt.—*Ibid.*

Cod-fish is by some esteemed hard of digestion, and of a clammy and glutinous substance; by others again it is considered quite the contrary, easy of digestion and highly nutritive. The substance indeed of this fish is of a moderate firmness, and not too hard. Salted and dried, it is less nutritious and more difficult of digestion. Of these kinds, the *haberdene* and *ling* are accounted the best and most dainty; *stockfish* the worst, concerning which, it has not been wrong said, '*perfecto non magis nutrit quam lapis*,' *i. e.* It yields no more nourishment than a stone. It is, therefore, reserved with biscuit bread for the strong stomachs of sailors, when not furnished with better food.

COFFEE.—Coffee is a decoction of the well-known bean, or berry, of that name, produced by the coffee-tree, which is cultivated in Arabia, Persia, the East Indies, the Isle of Bourbon, and several parts of America. It is also raised in botanic gardens in several parts of Europe. Prince Eugene's garden, at Vienna, produced more coffee than was sufficient for his own consumption. The tree, being an evergreen, makes a fine appearance at all seasons of the year, but especially when in flower; and when the berries are red, which is generally in the winter, so that they continue a long time in that state. Good Turkey coffee is by far the most salutary of all liquors drunk at meal time. It possesses nervine and astringent qualities, and may be taken with advantage at all times, except when there is bile on the stomach. It is a good antidote against an overdose of opium, and relieves obstinate spasmodic asthmas. For the latter purpose, the coffee ought to be of the best Mocha, newly burnt, and made very strong after grinding it. Sir John Pringle commonly ordered one ounce for a dose, which is to be repeated fresh, after an interval of from a quarter to half an hour, which he directed to be taken with sugar or milk. Sir John Floyer, who had been afflicted with asthma from the seventeenth year of his age until he was upwards of fourscore, found no remedy for his complaint in all his elaborate researches, until the latter part of his life, when he obtained it from coffee.

The Arabian coffee is found greatly to excel that raised in the West India plantations, and elsewhere, which is the reason of the tree not being so much cultivated in the British Colonies. Coffee-berries are very apt to imbibe the moisture of the flavour of any thing placed near them. They have been rendered very disagreeable, or utterly spoiled, by being placed in a closet near rum, spirits of wine, or pepper.

The beverage prepared from coffee berries has been familiar in Europe for more than a century, and among the Turks for upwards of 200 years. Its origin is not well known: some ascribe it to the prior of a monastery, who, being informed by a goat-herd, that his cattle sometimes browzing on the tree, would wake and caper all night, became curious to prove its virtues. Accordingly, he first tried it on his monks, to prevent their sleeping at matins. Others refer the invention of coffee to the Persians. It seems, however, to have been first brought into vogue at Aden, a city near the mouth of the Red Sea. Hence it passed to Mecca; from Arabia Felix it was conveyed to Grand Cairo; from Egypt it passed to Syria and Constantinople. Thevenot, the traveller, was the first who brought it into France; and a Greek servant, called Pasqua, brought into England in 1652, by Mr. Edwards, a Turkey merchant, to make his coffee, first set up the trade of a coffee man, and introduced drinking it in this island.

The bitter, astringent powers of the coffee-beans, in some measure correct the bad properties of warm water; but if they be too much roasted, their empyreumatic oil is expelled, and they acquire an insipid taste. If, on the other hand, they be not sufficiently roasted, this burnt oil is not evolved to the surface of the bean, and the coffee acquires a bitter and unpleasant flavour. When coffee is intended as a promoter of digestion, it should be carefully made by infusion, that is, by putting it into boiling water, and suffering it to stand and gently simmer; decoction dissipates its fine aromatic properties.

Coffee drunk after dinner promotes digestion; and agues, diarrhœas, and giddiness have been frequently removed by it. Its subtle oil stimulates the solids, rarefies the blood, and consequently is of peculiar service to females of a sedentary life, and to those who suffer phlegmatic and bilious disorders. If drunk too strong it affects the nerves, and, by its penetrating properties, often occasions tremors of the hands and sleeplessness; but in some phlegmatic and indolent individuals it is apt to excite sleep. The custom of taking coffee immediately after dinner, so generally adopted by the French, must, doubtless, tend to counteract the bad effects which the peculiar form of their diet is calculated to produce. If it be used merely as a diluent for relaxing the fibres, it ought to be made strong; that is, in the proportion of an ounce to a pint of water, which should be allowed to boil up, and left to simmer very gently, with every aperture in the coffee-pot closed, to keep in the steam as much as possible.

As coffee possesses excellent antispasmodic properties, it is a favourite beverage with the asthmatic and hysterical. The steam of boiling coffee has often been found beneficial to the eyes. If drunk in the morning, of a proper strength, for breakfast, it ought to be diluted well with milk, and indeed, some prefer to boil the milk with the coffee, which renders the latter more digestible. When taken in the afternoon, a small teacup full or two, without milk, and sweetened with sugar-candy, assists digestion, and is an excellent substitute for spirits, particularly to persons in a good state of health, and to such as are not habitual wine drinkers, or of a very irritable constitution. Its immoderate use, however, like every other thing taken in excess, is prejudicial to the health, and destructive to the diseased: it weakens the latter still more by causing great undulations in the blood, trembling of the limbs, giddiness, and a certain intolerable timidity. It leads people of a sanguine temperament, and particularly females, to the long train of all the fashionable nervous diseases. It frequently occasions, in some constitutions, a disagreeable eruption of the face, and many other troublesome disorders; and, says a late writer, (Willich), "occasions bleedings at the nose, and sometimes spitting of blood, induces frequent hemorrhoides, a hectic cough, and at last, consumption and death."

From several experiments and observations, made by Dr. Percival, to ascertain the effects of coffee on the human body, he infers that it is slightly astringent and antiseptic; that it moderates alimentary fermentation, and is powerfully sedative. It assists digestion, relieves the headache, and has been prescribed with great success in asthma, as already observed. In delicate habits, the too liberal use of it has been suspected of producing palsies. But if coffee be drunk warm, as above directed, within an hour after dinner, it is of singular use to those who have head-ache from weakness in the stomach, contracted by sedentary habits, close attention, or accidental drunkenness. It is of service when the digestion is weak; and persons afflicted with the sick head-ache are much benefited by its use in some instances: though this effect is by no means uniform.

Dr. Mosely observes, that, "the extraordinary influence which coffee, judiciously prepared, imparts to the stomach, from its tonic and invigorating qualities, is strongly exemplified by the immediate effect produced on taking it when the stomach is overloaded with food, or nauseated with surfeit, or debilitated by intemperance. To constitutionally weak stomachs, it affords a pleasing sensation; it accelerates the process of digestion, corrects crudities, and removes colics and flatulences. Besides its effect in keeping up the harmony of the gastric powers, it diffuses a genial warmth, that cherishes the animal spirits, and takes away the listlessness and langour which so greatly embitter the hours of nervous people, after any deviation to excess, fatigue, or irregularity.

"From the warmth and efficacy of coffee, in attenuating the viscid fluids, and increasing the vigour of the circulation, it has been used with great success in the debilitating disorders of women, in dropsy, and in worm complaints, and in those comatose, anasarcous, and such other diseases that arise from unwholesome food, want of exercise, weak fibres, and obstructed perspiration. There are few people who are not informed of its utility for the head-ache. The steam is sometimes very useful to mitigate the pains of the head. In the West Indies, where the more violent species of head-ache are more frequent, and more severe than in Europe, coffee is the only medicine that affords relief. Opiates are sometimes used, but coffee has an advantage that opium does not possess: it may be taken in all conditions of the stomach, and at all times by women, who are most subject to these complaints, as it dissipates those congestions and obstructions that are frequently the cause of the disease, and which opium is known to increase, when its temporary relief is past. Coffee having the admirable property of promoting perspiration, it allays thirst, and checks preternatural heat. The great use of coffee, in France, is supposed to have abated the prevalency of the gravel. In the French colonies, where coffee is more used than with the English, as well as in Turkey, where it is the principal beverage, not only the gravel, but the gout, those inveterate tormentors of the human race, are scarcely known. It has been found useful in quieting the tickling vexatious cough, that often accompanies the small-pox, and other eruptive fevers." Prepared clear and strong, and diluted with a large portion of boiled milk, it becomes a highly nutritious and balsamic diet; proper in hectic, pulmonic, and all complaints where a milk diet is useful; and is a great restorative to constitutions emaciated and worn down by gout and other chronic disorders. Long watching and intense study are wonderfully supported by it, and without the ill consequences that succeed the suspension of rest and sleep, when the nervous influence has nothing to sustain it.*

Bacon says, "Coffee comforts the head and heart, and helps digestion." Dr. Willis says, "Being daily drunk, it wonderfully clears and enlightens each part of the soul, and disperses all the clouds of every function." The celebrated Dr. Harvey used it often; Voltaire lived almost upon it; and the learned and

* Practical Treatise on Diet and Regimen, p. 276.

sedentary of every country have recourse to it, to refresh the brain oppressed by study and contemplation.

Notwithstanding all the encomia which have been pronounced in favour of coffee, the hostility which has been manifested against tea, has been applied with equal rancour to it, and probably with no less injustice; nor is it to be expected, that it should be exempted from opponents any more than advocates. Amongst the most furious of the former, was Simon Paulli: but he founded his objections against coffee, as he had his prejudices against tea, chocolate, and sugar, not on experience, but on anecdotes picked up by hasty travellers, which had no other foundation than absurd report and conjecture: by these tales that learned man confesses he supports a notion that coffee (like tea to the Chinese) acted like a great drier to the Russians, and abated aphrodisiacal warmth. This opinion has been received, and propagated from him, in the same manner as he received and propagated it from its fabulous origin. These suppositions have been refuted by Du Fours, and many travellers.

Sir Thomas Herbert, who was several years in the East, tells us that the Persians have quite a different opinion of coffee. They say that coffee comforts the brain, expels melancholy and sleep, purges choler, lightens the spirits, and begets an excellent concoction, and by custom becomes delicious. But all these virtues do not conciliate their liking of it, so much as the romantic notion, that it was first invented and brewed by the angel Gabriel, to restore Mahomet's decayed moisture, which it did effectually. A substance like coffee, possessed of active principles, and evident operations, must necessarily be capable of misapplication and abuse; and there must be particular habits which those operations disturb. Stare says, he used it in *too great excess*, and it affected his nerves: but Dr. Fothergill, who was a sensible man, and did not use it in too great excess, though he was of a very delicate habit, and could not use tea, drunk coffee almost constantly, many years, without receiving any inconvenience from it. But the history of particular cases sometimes serves only to prove that mankind are not all alike organized; and that the sympathy of one, and the antipathy of another, ought by no means to render useless that infinite variety which pervades all nature, and with which the earth is so abundantly blessed in the vegetable creation. Were it so, physic would acquire but little aid from the toils of philosophy, when philosophy had no other incitement to labour than barren speculation.

It has long been a custom with many people among us to add mustard to their coffee. Mustard or aromatics may with great propriety be added in flatulent, languid, and scorbutic constitutions, and particularly by invalids, and in such cases where warmth or stimulus is required. The Eastern nations add either cloves, cinnamon, cummin-seed, or essence of amber, &c. but neither milk nor sugar. Milk and sugar, without the aromatics, are generally used with it in Europe, America, and the West India Islands, except when taken after dinner; then the method of the French is commonly followed, and the milk is omitted. A cup or two thus taken after dinner, without cream or milk, promotes digestion, and has been found very serviceable to those who are habitually costive. If a draught of water be taken before coffee, according to the Eastern custom, it gives it a tendency to act as an aperient.

"If," says Dr. Mosely, "a knowledge of the principles of coffee, founded on examination and various experiments, added to observations made on the extensive and indiscriminate use of it, cannot authorise us to attribute to it any particular circumstance unfriendly to the human frame; if the unerring test of experience has confirmed its utility, in many countries, not exclusively productive of those inconveniences, habits, and diseases, for which its peculiar properties seem most applicable: let those properties be duly considered, and let us reflect on the state of our atmosphere, the food, and modes of life of the inhabitants, so injurious to youth and beauty, filling the large towns and cities with chronical infirmities: and I think it will be evident what advantages will result from the general use of coffee in England, as an article of diet, from the comforts of which the poor are not excluded; and to which purpose it may be often employed, as a safe and powerful medicine." Coffee is often imitated by roasting rye with a few almonds. Roasted grain, when properly prepared, is neither innutritious nor unwholesome.

Coffee, as used on the Continent, serves the double purpose of an agreeable tonic and an exhilarating beverage, without the unpleasant effects of wine. As drank in England, it debilitates the stomach, and produces nausea. In France and Italy it is made strong, from the best coffee, and is poured out hot and transparent. With us it is usually made from bad coffee, served out tepid and muddy, and drowned in a deluge of water, and sometimes deserves the title given to it in the "Petition against Coffee," 4to. 1674, p. 4, "a base, black, thick, nasty, bitter, stinking puddle-water."

"To make coffee fit for use, you must employ the German filter, pay at least four shillings per pound for it, and take at least one ounce for two breakfast cups."—*Kitchener's Cook's Oracle*, p. 417.

"No coffee will bear drinking with what is called milk in London." —*Ibid.*

"London people should either take their coffee pure, or put a couple of tea-spoonsful of cream for each cup." —*Ibid.*

As before observed, coffee, when used as a breakfast, on some parts of the Continent, particularly in the north of France, is usually made in the form of what is called *caffé au lait*, that is, strongly diluted with milk, and afterwards boiled. When used after dinner as an aid to digestion, or to revive or exhilarate the spirits, the above proportion would answer very well to such as might prefer it of that strength. It is such *high pressures* as this which not only render coffee but other aliments, both solid and fluid, highly objectionable in particular constitutions, or under certain conditions of body.

COLD, Preservative Effects of.—The preservative effects of cold to the inhabitants of the Northern nations are of the utmost importance, by enabling them to store up a sufficient stock of all manner of provisions for their winter consumption, and to receive supplies from a great distance. It is thus that veal frozen at Archangel is brought to Petersburgh; and the markets of Moscow present immense stocks of hogs, sheep, and fish. In Canada the same advantage is taken of the cold, as well as in all other countries where the frost is sufficiently steady.

Substances, probably as long as they continue in a hard frozen state, undergo no chemical change, the most striking proof of which was afforded by the body of an animal, perhaps antediluvian, being found imbedded in a mass of ice at the mouth of the Lena; but in the act of freezing, or of the subsequent thawing, some alteration is produced, which affects the nature of the substance. This, indeed, may be merely mechanical, from the particles of ice, during their formation, tearing asunder and separating the fibres; or by chemically destroying the intimate union of the constituents of the fluids, as in wine injured by having been frozen, or by causing new combinations, of which we have an example in the sweetness acquired by the potatoe. Captain Scoresby, contrary to popular belief, states that "the most surprising action of the frost on fresh provision, is in preserving it a long time from putrefaction, even after it is thawed, and returns into a cold climate. I have," says he, "eaten unsalted mutton and beef, nearly five months old, which has been constantly exposed to a temperature above the freezing point for four or five weeks in the outset, and occasionally assailed by the influence of rain, fog, heat, and electricity, and yet it has proved perfectly sweet. It may be remarked, that unsalted meat that has been preserved four or five months in a cold climate, and then brought back to the British coasts during the warmth of summer, must be consumed very speedily after it is cut into, or it will fail in a day or two. It will seldom, indeed, prove sweet after being cooked above twenty or thirty hours."

No other caution for preserving animal substances is necessary, than exposing them to a sufficient degree of cold. Captain Scoresby observes, that "animal substances requisite as food of all descriptions (fish excepted) may be taken to Greenland, and there preserved any length of time, without being dried, smoked, or salted. No preparation of any kind is necessary for their preservation; nor is any other precaution requisite, except suspending them in the air when taken on shipboard, shading them a little from the sun and wet, and immersing them occasionally in sea-water, or throwing sea-water over them after heavy rains, which will effectually prevent putrescency on the outward passage; and in Greenland, the cold becomes a sufficient preservation, by freezing them as hard as blocks of wood." The moisture is well preserved by freezing, a little from the surface only evaporating; so that if cooked when three, four, or five months old, meat will frequently appear as profuse of gravy as if it had been recently killed. We are not, however, informed by Captain Scoresby, why fish cannot be taken to Greenland in a frozen state; though this method of preservation is much used in Russia and Germany, and even in our own country.

Provisions that have been frozen, require some attention in thawing them. "When used, the beef cannot be divided, but by an axe or saw; the latter being generally preferred. It is then put into cold water, from whence it derives heat by the formation of ice around it, and soon thaws; but if put into hot water, much of the gravy is extracted, and the meat is injured without being thawed more readily. If an attempt be made to cook it before it is thawed, it may be burnt on the outside while the centre remains raw, or actually in a frozen state." These observations transcribed from Captain Scoresby, * an excellent observer, perfectly coincide with the directions of earlier writers. Thus, Krantz † says, "when fish taken under the ice are frozen, lay them in cold water, which thus draws the ice out of the fish, so that it can be scraped off their scales. They taste much better afterwards than when they are allowed to thaw in a warm room." We are not aware whether it be ignorance or inattention to this direction on the part of the London fishmongers, which causes the salmon sent from Scotland to London in ice, to be little esteemed.

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* See his account of the Arctic Regions, with a history and description of the Northern Whale Fishery. 2 vols. 8vo. Edinb. 1819.

† Encyclopædia, vol. 10, p. 586.

A second general method of preventing fermentation, &c., or what is the same, the removal of that degree of moisture which is an essential condition to this kind of chemical action, is Desiccation, which takes place in consequence of the air absorbing the moisture of bodies exposed to its action. It is therefore promoted by the size of the surface exposed; by the dry state of the atmosphere; increased temperature; and by the constant change of the air in contact with the body to be dried; or, in other words, by exposing it to a free current of air. This mode of checking fermentation, is assisted by dividing or cutting the bodies to be dried, especially across the grain, which acts not only by increasing the surface, but, perhaps still more, by dividing the vessels containing the moisture or fluids, and thus allowing them to be freely acted upon by the air, to which the skin or epidemis, when entire, frequently opposes a very great obstacle.

In pharmacy, where desiccation is often necessary, this is well understood, and expressed in the collegiate directions for drying squills and other succulent roots.

In domestic economy, it is also practised in drying artichoke bottoms; and guarded against when vegetables are required to be kept succulent, which are or ought to be trimmed or wounded as little as possible, until they are wanted for use.

Animal substances also dry much more slowly as long as the surface is entire; and hence, some butchers skin veal joint by joint only as it is required. The influence of extent of surface is a matter of constant observation. A little water, which would have required days to have evaporated out of a wine glass, disappears in a few minutes when spread over a china plate. Solid substances in like manner dry more quickly in proportion to the smallness of their size, as the surface exposed is proportionally greater. But none of the agents in accelerating exsiccation, has so great an influence as the dry state of the air by which it is effected.

In his "Journey to the Northern Ocean," Mr. Hearne gives an account of the manner in which the Indians of North America preserve by means of exsiccation, the flesh of musk oxen, deer, or of any other kind of animals. To prepare meat in this manner, the only operation required is, to cut the lean part of the animal into thin slices, drying it in the sun, or exposing it to the heat of a fire; after which it is reduced to powder, by beating it between two stones. Meat prepared in this manner is very portable, and always ready for use, and is very substantial; for Mr. Hearne found that he could always travel longer without victuals after making a meal of it, than after any other kind of food.

The Northern Indians dry their meat by the heat of a very slow fire, or by fastening it to the tops of the women's bundles, and allowing it to dry by the sun and wind as they walk along. But the Southern Indians expose it to the heat of a very large fire, which, in Mr. Hearne's opinion, exhausts its juices, renders it as hard as horn, and gives it a bitter taste; whereas, the other is soft and mellow in the mouth, and entirely free from smoke. Fish is also dried by them in the sun, and pounded for the sake of carriage.

COMPIEGNE.—A French sweet yeast cake, with fruit, and other ingredients.

COMPOTE.—A fine mixed *ragout* to garnish white poultry, &c.; also, a method of stewing fruit with syrup for desserts.

COMPOTIER.—A dish amongst the dessert services appropriated to the compote.

CONDIMENTS.—In the higher circles of society, and at the tables of the modern Apicii, a number of articles are used, known under the name of condiments, which serve to decorate the tables, and are of use with some kinds of food. These are condemned by Pliny, as highly pernicious, but he probably alluded to the feasts of Apicius and other luxurious Romans of those times, who carried every thing to excess.

The use of condiments seem to have been first suggested by a sense of oppression in the stomach, when languid and clogged with insipid food. With our aliments, condiments are variously used: they sometimes improve the taste of different articles of subsistence—at other times they correct their noxious qualities—sometimes they promote the digestion of such articles, and at other times accelerate their passage through the body.

Condiments may be considered under the following general heads:

The Saline.
Saccharine.
Acidulous.
Hot, Aromatic, or Spicy.
Oleaginous.
Compound.
Ice.
Miscellaneous.

Man is very fond of being stimulated, and very desirous of experiencing again the stimulants which he has already experienced. Instances of this we have in snuff, &c., and this will explain the use of condiments, which, if used within certain limits, are in a manner natural to man, and may be very useful.

Salt.—This is the most common article used as a condiment. Infants soon become fond of it. If taken moderately is very wholesome, although not nourishing, and most of it passes off by the urine.* It stimulates and promotes the secretion of gastric juice. It is stimulatory, however, to the stomach without any necessity, and the viscus when once used to stimulants, can no longer digest without them.

Salt is more necessary with fat meat than with lean, and it ought to be used sparingly by young, florid, and hale people, as it heats, and creates thirst. In tropical climates, where they use more vegetable food, they use a larger quantity of condiments than in Europe, independently of their growing there, as pepper, nutmeg, &c. All our fluids are impregnated with sea-salt, so great is the quantity we take. It is found in all secreted fluids, dropsies, the blood, and contents of the intestines: it is not assimilated, but passes through the different channels.

Vinegar, or Acetous Acid, is also much used. It contains some small nutritive particles, but is chiefly used to excite the appetite, to cool the food, and render it more sapid; it is usually mixed with food of quite a different nature, as mustard, pepper, &c. It was very anciently used: the Roman soldiers mixed it with water for common drink.

Sour milk is a common condiment with the Highlanders. Ketchup is merely salt flavoured with mushrooms; and salt is a sort of volatile alkali, with common salt, flavoured with the soyo-bean—the putrefied dolechas-soyo growing in China, impregnated with sea-salt.

Hot and spicy condiments consist of cloves, cinnamon, Cayenne-pepper, &c.; certain seeds, as carraway, aniseed, cummin, &c.; acrid roots, as horse-radish, onions, shalots;—all these increase the secretion of saliva and gastric juice, prevent flatulency, warm the stomach, and strengthen it.

There are other substances used as stimulants to the stomach, though they cannot properly be called condiments.

1. *Sugar* is used as food, condi-

* Salt is either procured from rocks in the earth, from salt springs, or from sea water. Lymington, in Hampshire, makes various kinds of salt, both medical and culinary. There is an excellent salt-spring at Droitwich, and Cheshire abounds in saline waters.

ment, medicine, and as preserving substances from putrefaction. It is injurious to the teeth, because on them it combines with oxygen, and forms oxalic acid, which has a great affinity for the teeth.* It is nutritious, antiseptic, and laxative, and is considered as promoting the solution of fat in the stomach; but as it is very fermentable, and is apt, in many constitutions, to produce flatulence, heat, and thirst, its unlimited use seems to be one cause of the increased and increasing frequency of bilious and hypochondriacal disorders. Chlorotic girls, rickety children, and hysterical women, and all who are troubled with acidity in the stomach and bowels, should abstain from it; and those who are anxious to preserve their teeth white and sound, should not be too free with it.

2. *Vinous Liquors.*—By drinking these we can digest a larger quantity of food, the stomach being stimulated, and therefore having a more powerful action. It has been said, that they harden the food, and coagulate it; but if this be true, it is a question, whether food coagulated is not more easy of digestion. They stimulate the sanguiferous and chyliferous systems, and if not taken very moderately, prove hurtful by exhausting the irritability, producing the same effect as a whip on an animal—it makes him go when tired, whether he will or not.

Wine has been called, "the milk of old age;" so "milk is the wine of youth." Dr. Johnson observed, that it is much easier to be abstinent than to be temperate, and no man should habitually take wine as food till he is past thirty years of age, at least.* That wine is best for elderly people which is strong and diuretic, to carry off any superfluous serosities, which, by remaining in the body, might become injurious to their health.

3. *Alcohol.*—This differs in flavour, according to the substances from which it is prepared, or the artificial additions it receives. It appears in different forms, as brandy, rum, gin, usquebaugh, eau de vie, &c. It is more deleterious than wine, and produces all its ill effects more quickly. When well diluted, and not too frequently used, it may prove useful.

4. *Mustard.*—The use of mustard is extremely ancient. It is mentioned by Hippocrates, in his Treatise on Diet; and Aretaeus recommends it to be taken liberally with food, in cases where other stimulants are forbidden. He is very lavish in his praises of it for its good effects in expelling flatulence and promoting digestion. In France, where they pay such particular attention to every thing connected with the table, mustard is celebrated as by far the best of all stimulants, as agreeing with every species of food, promoting digestion, augmenting the elasticity of the fibres, increasing the dissolving juices of the stomach, and doubling their force; and particularly calculated for the aged, or those whose stomachs and bowels are weak.

5. *Salad Oil,* is the chief of the oleaginous condiments, and in the countries where it is procured in perfection, the consumption is very great, answering the purposes of butter. It is of a mild and bland nature, with little odour or taste. When used in salads, or as a seasoning for raw vegetables, it checks their fermentation

* Notwithstanding these observations, there are some constitutions which furnish exceptions: for instance, we are told that one of the Dukes of Beaufort took, for the space of forty years, nearly a pound of sugar every day, yet it neither disordered any of the viscera, nor injured the teeth, and he lived to attain the age of seventy.

* No man in health can need wine till he arrives at forty: he may then begin with two glasses in the day; at fifty he may add two more.—See *Trotter, on Drunkenness.* — Also, the Art. *Wine, passim.*

in the stomach, and thereby prevents them from becoming too flatulent. When thus employed, in small quantities, it assists digestion; but when taken in large quantities it cloys the appetite, and lays the foundation for bilious complaints, more especially with weak stomachs.

6. *Melted Butter.*—This is another oleaginous condiment. It makes a proper and not an unwholesome addition to boiled vegetables, and to various sorts of fish; but it frequently disagrees with weak stomachs, particularly when the quality of the butter is indifferent, or when it is improperly melted, which is frequently the case. It should be done as follows:—Mixing the proportion of a tea-spoonful of flour to four ounces of the best butter on a trencher, put it into a small saucepan, and two or three tablespoonful of hot water, boil quick a minute, shaking one way all the time; milk used instead of water requires rather less butter, and looks whiter.

It would appear from Dr. C. O.'s experiments, that excess in the use of oleaginous substances, is more hurtful to the body than excess in any other articles of food; and that we ought to be particularly careful in regulating the quantity and attending to the quality of the oil we employ in diet. Seasonings and sauces ought not to be much indulged in by young stomachs, and strong healthy bodies, who require no spur to their appetite nor help to digestion; but these auxiliaries should be reserved for age, deficiency of appetite, and other infirmities—otherwise that benefit and assistance will not be received from them, which might have been experienced had the use of them been forborne when they were not necessary.

7. *Olives*, are considered as a condiment with us, but they are a food in their native soil; they are best in their pickled state, as they then lose much of their bitterness and acrimony; from their oily nature they are improper for delicate stomachs.

8. *Cheese*, of a rich quality, becomes highly putrid or alkaliscent when it gets old, and therefore it is a good condiment after insipid meats.

Under the head of condiment, perhaps the use of ice may be included, as it gives a cooling relish to our liquid food, and as a kind of seasoning to fruit. On this subject it may be observed, that though in some countries, and for some constitutions, the prudent and the moderate use of ice may occasionally be proper; yet in general, it produces more injurious than beneficial effects. On the whole, the subject of spices and seasoning coming under the designation of condiments, is both common and important; and it may be observed of them, that when taken in small quantities, merely to give tastefulness or sapidity to the food, they certainly have a tendency to increase the appetite; to favour a proper quantity of aliment being taken, and to promote digestion; but, when condiments are used immoderately, they tend to weaken the stomach, to occasion acrimony in the fluids, and to produce a general irritation of the system.— See *Respective heads of each kind of Condiment.*

CONGER.—The conger, or as usually called from its resemblance, the conger eel, is very highly prized by some; others again hold it in no estimation; and in our opinion, with no less reason; for it is difficult of digestion, and requires a strong stomach to encounter it, as well as a body free from infirmity.

CONSERVES.—A variety of fruits, such as apricots, plums, damsons, green-gages, peaches, nectarines, &c., in their natural state, may be conserved in a fluid transparent syrup, of such a consistence as will prevent them from spoiling. This method of preserving fruits requires some care; for if they are too little impregnated with sugar, they do not keep; and if the syrup is too concentrative, the sugar crystallizes, and thus spoils the conserved fruit.—See *Sugar*.

COOKERY. — The processes of cookery, notwithstanding the great number of recipes, are but few. In some, the chief object is to extract the fluid or soluble parts of the substances cooked; in others, to alter the nature of the substances itself, and often to combine both purposes.

The processes of the culinary art, are therefore reduced to

1. Baking.
2. Boiling.
3. Roasting.
4. Broiling.
5. Frying, &c.—which see

All alimentary substances, for the purpose of food, are used in their raw or crude state, or after having undergone some kind of preparation. Fruits and salads, though they admit of various forms of cookery, are for the most part eaten in as fresh and natural state as possible. Cooking is either necessary to dishing some deleterious property, or to render food more palatable and nutritious: of the former effect, the most remarkable instance is furnished by various species of *asum*, or dragons' wort; which, in their crude state, are acrid or even poisonous, but by being cooked, become mild and wholesome. The acrimony recedes in a very volatile principle, which is easily dissipated by heat. A more familiar example is in this country furnished by the onion tribe; the acrimony and flavour of which are entirely destroyed, by being long subjected to the action of heat.

Fire is a principal agent in almost all the processes of cookery, and the most economical mode of applying it has engaged the attention of many philosophers and artists. Convenience and economy are the objects proposed by all alleged improvements. The nature of the fuel is of no little importance, and is different in different countries. Pit-coal has the advantage of forming a lasting fire, and producing an intense degree of heat, which renders it almost indispensable for roasting, but its smoke is very detrimental—both by the unpleasant flavour it imparts, and by the inconvenience arising from the flame, and from the soot deposited upon vessels and in the chimney. Wood and turf make less smoke than pit-coal,* but their flavour is more penetrating; they give less heat and are less desirable. The clearest and most generally useful fuel is charcoal of wood, or coke, neither of which gives out any smoke, or imparts any flavour. Charcoal is more easily kindled, but coke lasts longer, and gives out more heat. Well-burnt cinders are an excellent substitute for coke, and which in every family ought to be carefully preserved for the purposes of cookery.

COPPER.—The weight of testimony is decidedly in favour of copper, in its metallic state, not being poisonous. Orfila, an eminent toxicologist, cites several cases where masses of it were swallowed, and after some time voided by the natural passages, without injury. And a case is related where six penny pieces were swallowed, with a view to self-destruction, and no inconve-

* Coal, a well-known common fossil fuel. Mr. Brand, in his History of Newcastle-upon-Tyne, observes, that though some writers have not scrupled to affirm, that coal was unknown to the Ancient Britons; yet, others have contended for the contrary, by almost irresistible arguments. And the facts and testimonies adduced by Mr. Brand, afford much reason to conclude, that coal, though at first unnoticed in Britain by the Romans, was afterwards in actual use among them. The first public account of coal we meet with is in the year 1239, when Henry III. confirmed the charter granted by John his father, to the inhabitants of Newcastle, to dig coals in the common soil without the walls of the town.

nience was experienced. (See *Dr. Paris's Med. Jurisp.*). There are cases, however, which seem to contradict the usual results, but its peculiarities are probably to be ascribed to some previous oxidation of the metal. A child, three years old, swallowed two copper farthings by accident, at an interval of a year and a half after each. After swallowing the first he ate nothing for ten days, complained of great pain in his stomach, and drivelled as if he had been salivated. After the second, he began by degrees to lose his flesh, and had the appearance of consumption. He was, however, perfectly cured by the Bath waters. (*Philosoph. Trans.* vol. 20, p. 424). A case is also mentioned by Dr. Jackson, of Boston, in America, where the swallowing of a piece of copper coin, called a half-cent, produced nausea and vomiting, with several other symptoms characteristic of the poison. (*New England Journ.* vol. 3, p. 156). It is not so certain that copper in a state of minute division, as filings for example, is equally innocuous with the pure metal. Portal relates a case where they were given to an individual labouring under abdominal dropsy, and while the disease seemed to yield, colic, vomiting, and other symptoms supervened. (*Orfila*, vol. 1, pp. 166-7-8). Experiments on animals, however, with large doses of copper filings, mixed with grease and oil, have produced no injury, and in dissection, their metallic brilliancy was found untarnished.

Verdigrease (a solution of copper by mineral acids) is a most violent poison; and it is well known that a quantity of this solution will produce colics, vomitings, intolerable thirst, universal convulsions, and other dangerous symptoms. The preparations of copper are seldom used as the instruments of crime, though frequently poisonous through accident, owing to its being extensively used for domestic purposes in the shape of cooking utensils. All copper utensils, consequently, should be properly sheathed, that is, as it is termed, tinned, to prevent chemical action from taking place upon this metal, and thereby disengaging its poisonous properties. The air itself of the kitchen, abounding with oleaginous and saline particles, disposes, before they are used, copper utensils to solution. Copper, when handled, yields an offensive smell, and if touched with the tongue, has a sharp and pungent taste, and excites nausea.

There is, indeed, reason at all times to dread the effects of copper on the human system, from the facility with which it oxidates. Exposed to a moist atmosphere, copper becomes tarnished, and passes into a state of oxide, which soon after unites with the carbonic acid of the atmosphere, and forms a greenish carbonate of copper. Milk, however, although boiled for two hours in a clean kettle, did not contain any trace of copper; and the same result was obtained with tea, coffee, beer, and rain water. But if the water contained muriate of soda (common salt), it dissolved a notable portion of copper. These experiments were made by Mr. Eller, a chemist, at Berlin, who also noticed a remarkable circumstance in connexion with the last phenomenon. If instead of a simple solution of muriate of soda, it was previously mixed with beef, bacon, and fish, the fluid resulting did not contain a trace of copper. (*Orfila*, vol. 1, p. 202). Fat bodies, assisted by the oxidizing principle of the atmosphere, act with celerity on it; and *Proust* explains the quick corrosion and destruction of the copper sheathings of vessels, from the combined action of grease and muriate of soda. Don Raphael (observes Proust) ascertained this cause, and when he placed sheets of thick coarse paper between the plaster of fat and the copper, to prevent their contact, the durability of the sheathings was secured.

It must, however, be remarked, that the vegetable acids, generally, dissolve copper with difficulty, even though assisted by heat. And hence the boiling of sugar or syrups in vessels of this metal, does not of itself produce any noxious compound, unless it be left to cool in them. In the latter case, the boiled substance acquires a bad taste and a green colour, and the copper forms an oxide on its surface. These facts are sufficient to prove the necessity in all cases of tinning vessels intended for the preparation of articles of food. Numberless causes (says Proust), unite to accelerate the dissolution of copper, since the juices of all barrels are fat, and acid naturally saline. It is, therefore evident, that tinning is indispensable for kitchen utensils. Cleanliness, however, may ward off many formidable injuries. "In the orphan house at Halle, in Switzerland, from 600 to 900 persons daily eat food dressed in large copper kettles; and yet I never heard there of any bad effects from them. Here, however, I must observe, that the cleanliness was quite exemplary; that in the afternoon, we observed with pleasure and admiration, the kitchen perfectly clean; and the copper vessels bright."—(*Michaelis's Commentaries*, vol. iii. p. 388).—Proust has shewn another advantage from the precaution of tinning copper utensils. The usual alloy applied in tinning vessels, consists of equal parts of tin and lead; and the tin being more oxidizable than the lead, is exclusively dissolved by any vegetable acid that may be contained in the viands. These compounds of tin are known to be harmless. Copper and bell-metal mortars are evidently hazardous, for similar reasons, in the shop of the apothecary. Not only will moisture affect them, but also many articles of the Materia Medica, and thus a dangerous compound may be the result.

Verdigrease in a natural state, (carbonate of copper) forms spontaneously on the surface of copper, or brass vessels, pieces of coin, &c. The oxide of copper is of a blackish brown colour. Both of them are highly poisonous, and colic and vomiting are their usual symptoms. From the remarks previously made on this subject, it will be readily understood why copper utensils, when not properly cleaned, contaminate acid substances boiled in them. Vinegar dissolves the oxide with ease, as also does ammoniæ. Eller has proved that wine dissolves copper, doubtless in consequence of the acetic acid contained in it, and the oxidation of this metal by the air. And we can explain in the same way, the production of the acetate in the cocks of vessels from which wine, beer, or cider, is drawn. Drouard was affected three days with colic and diarrhœa, in consequence of eating a ragout, which had been seasoned with wine drawn out of a cask, the cock of which contained acetate of copper, which this liquor had in fact dissolved. Moseley relates, that in 1592, at a meeting of the great Senate of Bern, the wine was put into copper vessels, and suspended in a well, in order to cool it. In a few days, the legates and others who had drank of it, were seized with violent pain in the abdomen, fever, and dissentery, and many died.—(*Moseley on Tropical Diseases*). Fat bodies, such as fixed and essential oils, dissolve the oxide acid carbonate of copper with readiness; and hence, Proust very justly condemns the use of copper measures for oil.—(*Orfila*, vol. i. pp. 206 to 203). In several cities in Europe, distillers, apothecaries, and others, are forbidden to use copper vessels, unless they are tinned.—See *Ehrman in Schlegel*, vol. iii. p. 230.

The tests of these compounds are similar to those of verdigrease. The compound substance known under the latter name, is the preparation of copper, which most frequently produces deleterious effects. Orfila has produced numerous cases illustrating its action; and hence it will be useful to state the mode in which the respective individuals were poisoned.

1.—In one instance, a family consisting of nine persons were affected; the first of these by a cake made with melted butter, and skimmed with a copper instrument, upon which the fat body had been allowed to cool; five, from some broth and meat coming out of a saucepan, skimmed by the same skimmer; and the remainder by a fricassee of pigeons, prepared in the same pan.

2.—The Jacobin Friars, in Paris, to the number of twenty-one, were poisoned in 1781, by eating some ray, which had been cooked in a copper vessel. The cook, after taking out part of the water, had poured vinegar on the fish to render them more firm, and in this state they had stood for some time away from the fire.

3. Some veal, placed in an earthen pot, to which there was a copper lid, and which lid lay directly in contact with the meat, affected two individuals; also eggs prepared with sorrel and butter, in a copper vessel, which was covered with verdigris, produced similar effects. Dupuytren mentions a case where a whole family was poisoned from eating lobsters, which had been cooked, and afterwards placed in a copper kettle, with vinegar poured over them. Even peas which remained for a day in a copper vessel, have produced all the characteristic effects of poisoning from copper.

Symptoms of.—The symptoms consequent on having swallowed a sufficient quantity of verdigris, are thus detailed by Orfila. "An acrid, styptic, coppery taste in the mouth, parched and dried tongue, a sense of strangulation in the throat, coppery eructations, continual spitting, nausea, copious vomitings, or vain efforts to vomit, shooting pains in the stomach, which are often very severe; horrible gripes, very frequent alvine evacuations, sometimes bloody and black; debility, &c. The abdomen inflated and painful; the pulse small, irregular, tight, and frequent; syncope, heat of skin, ardent thirst, difficulty of breathing, anxiety about the pit of the stomach, cold sweats, scanty urine, violent headache, vertigo, faintness, weakness in the limbs, cramps of the legs, and convulsions." All these symptoms, however, do not generally occur in the same individual, but vomiting and colic are very constant. Hiccup has been noticed as a constant symptom in a fatal case.

Antidotes.—The investigations of M. Marcelin Duval, and the earlier experiments of Orfila, seemed to prove that *sugar* was the antidote for verdigris. It allayed the pain and other alarming symptoms, and produced a great number of liquid stools. Subsequent researches have, however, diminished the value of this substance. It is useful in calming the irritation when the poison has been expelled by vomiting, but it exerts no chemical action on it; and animals, on whom the gullet was tied, died, notwithstanding large doses of syrup were administered. When albumen was given under similar circumstances, the animal survived several days, experienced no remarkable change, and after death no lesion was found. It is hence the proper antidote, whilst sugar and its preparations may be used to aid its operation. The inflammatory symptoms, should any remain after the supposed evacuation of the poison, are to be treated as inflammation of the stomach. Orfila relates a case, where sugar apparently saved the life of the patient. After the second draught, &c., sugar and water, and whites of eggs, the vomiting and epigastric pains ceased; the patient fell asleep, and awoke quite well.—*Orfila*, vol. ii. p. 466.

Chemical Proofs of the Existence of Verdigris.

a. Sulphuric acid poured on the verdigris, in powder, decomposes it with effervescence, and vapours of acetic acid are disengaged. But it must be recollected that no such effect is produced with natural verdigris (the carbonate of copper). In this case acetic acid should be poured upon it, and the subsequent tests applied.

b. Sulphuretted hydrogen decomposes it, and precipitates a black sulphuret of copper.

c. A clear plate of iron immersed in the solution, becomes covered in a few hours with a portion of the copper, and the blue colour of the solution grows first green and then red.

d. Ammonia gives a blue precipitate, but if added in excess, the precipitate re-dissolves, and the liquor is of a beautiful blue colour.

e. Chromate of potash gives a yellow precipitate.

f. If the suspected substance be in powder, it should be mixed with charcoal, and heated to redness in an earthen crucible. Metallic copper will be formed. The same process is proper, when the fluid is combined with substances which prevent the action of tests. Evaporate it to dryness, and then calcine with charcoal. There are various other tests for the detection of this substance, either in a fluid or solid state, which may be consulted by the curious, in the Toxicological writers, and particularly Orfila.

g. The ferro-cyanate of potash has long been used as a test for iron and copper in solution, and it is hardly possible to imagine any thing more sensible than its indications. M. Brandenburg, however, recommends as superior to it, the ferro-cyanate of ammonia (prussiate of ammonia and iron). It should be of a fine yellow colour.

The acetate, sulphate, muriate, nitrate, and ammoniaret of copper, are all poisonous to the human system, and they are to be detected by most of the tests already enumerated, but most decisively by the reduction of the metals; so also with coppery wine or vinegar. The tests here, however, are uncertain; and the only mode left, is to evaporate the precipitate to dryness, and calcine the residue in order to obtain metallic copper. If there be copper or iron in wine, there will be a black powder thrown down by Hahneman's test; but the wine impregnated with copper will be discoverable by the taste; and iron is not dangerous.—See *Wine Tests.*

CORIANDER. *(Coriandrum Sativum).*—An umbelliferous plant, a native of the south of Europe; found wild about Ipswich, and in some parts of Essex, though Dr. Smith does not consider it indigenous. The seeds of the coriander are imported for the use of the brewer, as well as for medicinal purposes; their smell, when fresh, is strong and disagreeable, but by drying becomes sufficiently grateful. The plant is found wild in this country, but is a doubtful native. The seeds are stomachic and carminative, but are seldom used alone, but as a corrective addition to senna and other active purgatives.—See *Caraways.*

COURONNE, EN. *(En Couronne).*—To serve up any prescribed articles on a dish in the form of a crown.

COURT, or SHORT, *(To Stew).* To reduce a sauce very thick.

CRAB.—The crab is an animal found equally in fresh and salt water, upon land and in the ocean. In shape it differs much from the lobster, but entirely resembles it in conformation. The tail in this animal is not so apparent as in the former, being a broad flap, that seems to cover a part of the belly, and when lifted, discovers the spawn situated there in great abundance. It resembles the lobster in the number of its great claws, which are two, and its legs, which are eight. As the crab is found upon land as well as in the water, the peculiarity of its situation produces a difference in its way of life, which it is proper to describe. The land crab is found in some of the warmer regions of Europe, and in great abundance in all the tropical climates in Africa and America. They are of various kinds, and endued with various properties; some being healthful, delicious, and nourishing food; others poisonous or malignant in the last degree; some are not above half an inch broad, others are found a foot over; some are of a dirty brown, and others beautifully mottled. That animal called the violet crab of the Caribbee Islands, is the most noted both for its shape, the delicacy of its flesh, and the singularity of its manners.

The violet crab somewhat resembles two hands cut through the middle and joined together; for each side looks like four fingers, and the two nippers, or claws, resemble the thumbs. The body is covered with a shell, bunched in the middle, on the forepart of which there are two long eyes of the size of a grain of barley, as transparent as crystal, and as hard as horn. A little below these is the mouth, covered with a sort of barb, under which there are two broad sharp teeth as white as snow; with these teeth they can easily cut leaves, fruits, and rotten wood, which is their usual food. But their principal instrument for cutting and seizing their food is their nippers, which catch such an hold, that the animal loses its limb sooner than its grasp, and is often seen scampering off, having left its claws still holding fast upon the enemy. In fact, it loses no great matter by leaving a leg or an arm, for they soon grow again, and the animal is found as perfect as before.

This, however, is the least surprising part of the creature's history, and what remains, were it not as well known, and as confidently confirmed, as any other circumstance in natural history, might well stagger our belief. These animals live not only in a kind of orderly society in their retreats in the mountains, but regularly, once a year, march down to the sea side in a body of some millions at a time. They choose the months of April or May to begin their expedition; and then sally out by thousands, from the stumps of hollow trees, from the clefts of rocks, and from the holes which they dig for themselves under the surface of the earth. At this time the whole ground is covered with this band of adventurers. The sea is the place to which they direct their march, with right-lined precision; they neither turn to the right or left, and even if they meet with a house, they will attempt to scale the walls, to keep the unbroken tenour of their way. But though this be the general order of their route, they are, upon some occasions, compelled to conform to the face of the country, and if it be intersected by rivers, they are then seen to wind along the course of the stream; they are commonly divided into three battalions, of which the first consists of the strongest and boldest males, who, like pioneers, march forward to clear the route, and face the greatest dangers. These are often obliged to halt for want of rain, and go into the most convenient encampment till the weather changes. The main body of the army is composed of females, which do not leave the mountains till the rain has set in for some time, and then descend in regular battalions, being formed into columns of fifty paces broad and three miles deep, and so close that they almost cover the ground. Three or four days after this the rear guard follows; a straggling undisciplined tribe of males and females, neither so robust nor so numerous as the former. The night is their chief time of proceeding; but if it rains by day, they do not fail to profit by the occasion, and they continue to move forward in their slow uniform manner. When the sun shines, and is hot upon the surface of the ground, they make an universal halt, and wait for the cool of the evening. When they are terrified, they march back in a confused disorderly manner. They try to intimidate their enemies, by often clattering their nippers together, as if to threaten those that disturb them. But though they thus strive to be formidable to man, they are much more so to each other; for they are possessed of one most unsocial property, which is, if any of them by accident is maimed in such a manner as to be incapable of proceeding, the rest fall upon and devour it on the spot, and then pursue their journey. When, after a fatiguing march and escaping a thousand dangers, they have arrived at their destined port, they prepare to cast their spawn. The peas are as yet within their bodies, and not excluded, for the creature waits the benefit of sea water to help the delivery; for this purpose, the crab has no sooner reached the shore, than it eagerly goes to the edge of the waters, and lets the waves wash over its body two or three times. This seems only a preparation for bringing their spawn to maturity; for, without further delay, they withdraw to seek a lodging upon land: in the mean time the spawn grows larger, is excluded out of the body, and sticks to the barbs under the tail; this bunch is seen as big as a hen's egg, and exactly resembling the roes of herrings; in this state of pregnancy they once more seek the shore, for the last time, and shaking off the spawn into the water, leave accident to bring it to maturity. At this time whole shoals of hungry fish are in expectation of this annual supply; the sea to a great distance seems black with them, and about two-thirds of the crabs' eggs are immediately devoured by these rapacious invaders. Those that escape are hatched under the sand, and soon after, millions at a time of these little crabs are seen quitting the shore, and slowly travelling up to the mountains.

The old ones are not so active to return; they become so feeble and lean, that they can hardly creep along, and the flesh at that time changes its colour. Most of them, therefore, are obliged to continue in the flat parts of the country till they recover, making holes in the earth, which they cover at the mouth with leaves and dirt. There they cast their old shells, and lie quite naked, almost without motion, for six days together, when they become so fat as to be delicious food. These crabs are of considerable advantage to the natives, and the slaves very often feed entirely upon them. In Jamaica, where they are found in great plenty, they are considered as one of the greatest delicacies of the place, yet still the eating of them is attended with some danger, for even of this kind many are found poisonous, being fed, as it is thought, upon the manchineel apple, and whenever they are found under that noxious plant, they are always rejected with caution. It is thus with almost all the productions of those luxuriant climates; however tempting they may be to the appetite, they but too often are found destructive, and scarce a delicacy among them that does not carry its own alloy.

CREAM.—One of the component proximate ingredients of milk. It is exceedingly nourishing, but too fat and difficult to be digested in a sedentary life. It rises to the surface of the milk, after it has stood for some hours, and may be skimmed off, and in this manner separated from it.

Cream appears to possess many of the properties of oil; it is smooth and oily to the touch, and stains cloth in the same manner as other unctuous substances. After standing some days it gradually becomes thicker, and at length forms a soft solid, in which the flavour of cream is no longer perceived, and that of cheese is substituted in its place.

According to Berzelius, cream is a compound body, consisting of

Butter . . .	4.5
Cheese . . .	3.5
Whey . . .	92 parts.

But since the whey holds certain salts in solution, the whole of the solid matter contained in the cream may be considered as amounting to 12.5 per cent. When cream is agitated, as is done by the common process of churning, it is separated into two parts,—a thick animal oil, well known by the name of butter,—and a fluid, which possesses exactly the same properties as milk that has been deprived of its cream. This change has been supposed to arise from the combination of the cream with the oxygen of the atmosphere; but it takes place, though perhaps not equally well, in vessels from which the air has been excluded.—See *Butter*, *Curd*, *Milk*.

CREAM of TARTAR.—See *Tartar*, &c.

CROUSTADE.—Bread baked in a mould, and scooped out to contain minces.

CROUTONS.—Bread cut in various shapes, and fried lightly in butter or oil.

CUBEBS.—Cubebs, cardamoms, vanilla, and cloves, (which see), are hot and pungent, consequently improper for daily use. Cubebs are much inferior to pepper in pungency, consequently it fell into disuse as a condiment. It formerly held a place in the Materia Medica, and has lately been introduced again into practice. The Turkey yellow-berries, namely, the dried fruit of the buckthorn, are often substituted for the cubebs, and the similarity between them is so great, that the casual observer may be easily deceived.

CUCUMBERS.—A wholesome, gently opening, and cooling fruit, which may be of considerable service to the consumptive, as it has the property of sweetening acrid humours. (Willich). They shew a tendency to ferment, and produce diarrhœa, which may, however, be prevented by the addition of vinegar and pepper, which also counteract their natural coldness. Prepared with oil, vinegar, and salt, they are insupportable to some weak stomachs, and occasion frequent eructations, and flatulency. But properly pickled, they are an excellent antiseptic, though unfit for children and wet-nurses.—See *Melons*.

CUCUMBERS, To Pickle.—1. The cucumbers are to be sliced pretty thick; to a dozen of which slice in two or three good onions, and stew them in a large handful of salt, and let them lie in their liquor twenty-four hours; then drain them between two coarse cloths. For the pickle, boil best white-wine vinegar, with some cloves, mace, and Jamaica pepper in it, and pour it scalding hot over them, as much as will cover them all over. When they are cold cover them up with leather, and keep them for use.

2. Wipe your cucumbers very clean with a cloth, then take as many quarts of vinegar as you have hundreds of cucumbers; take dill and fennel, cut them small, put them to the vinegar, and set it over the fire in a copper kettle, and let it boil; then put in your cucumbers till they are warm through; pour all out into a deep earthen pot, and cover it up very close till the next day; then do the same again; but the third day season the liquor before you set it

on the fire: add salt till it becomes blackish, some sliced ginger, whole pepper, and mace; then set it over the fire again, and when it boils put in your cucumbers. When the cucumbers are hot through, pour them into the pot, and cover it close. When they are cold, put them in bottles with open mouths, and strain the liquor over them. Pick out the spice, and add it to them; and cover them well with bladder or oil-skin.

The cucumber, though moist and cold, is the most approved salad alone, or in composition, of all the venaigrets, if rightly prepared, by correcting the vulgar mistake of extracting the juice, in which it should be rather soaked; neither ought too much oil be added to it; it should be thinly pared and cut in thin slices, with a few slices of onions to correct the crudity; it should be often turned, and moderately drained. Some eat them as soon as cut, and retain the liquor, which, in the opinion of Evelyn, in his Acetaria, is the most approved method. The pulp is greatly refreshing in both, and may be mingled in most salads without the least injury. The smaller sort, known by the name of gherkins, salted with the seeds of dill (No. 2), and mango pickle, are for winter use.—See *Mango*.

CULINARY POISONS.—In the cookery of vegetables, which, more frequently than any other species of aliment, are submitted to the boiling process, the greatest care and attention ought to be observed towards all culinary utensils, by seeing that they are properly tinned, if constructed of copper, (see *Copper*); and that, in every other respect, they are fit for the several purposes intended. The principal mineral culinary poisons, are copper and lead. See *Lead*. For the vegetable culinary accidental poisons.

See Hemlock, Small.
Hemlock Dropwort.
Herb Christopher.
Laurel, Common, Leaves of.
Mushrooms, Poisonous.
Thorn Apple.
Wolfsbane.

From the resemblance of many of the above vegetable tribe of poisonous herbs to those which are known to be edible, and used either as salads or pot-herbs, serious accidents have occurred. They may not only be mistaken for the genuine articles, but, if gathered in a wild state, a commixture of the poisonous and healthy may be collected together, from the want of a knowledge of their true botanical characters. Accidents of this nature are best counteracted by emetics; producing full vomiting, by copious draughts of lukewarm water until the contents of the stomach be entirely ejected; after which cordials, such as negus and brandy and water, should be given, if the symptoms gradually subside, followed by a full dose of castor oil.—See *Poisons, &c.*

CUMMIN.—This plant resembles fennel, but is much smaller. It is an annual, and a native of Egypt and Ethiopia. The seeds are bitter and warm to the taste, and have an aromatic disagreeable flavour. They are carminative and stomachic, though seldom used internally; but mostly as an ingredient in plasters. There is an opinion that cummin will make those who drink it, or wash themselves with the infusion of it, or who smoke it, of a pale visage. This belief is mentioned by Dioscorides; and we are informed by Pliny, that the disciples of Portius Latro, a famous master of the art of speaking, were reported to have used cummin, in order to imitate that fulness which their master had contracted by his studies. Horace also makes an allusion to that subject:—

—————————— Proh si
Pallerem casu, biberent ex sangue cuminum.

Epist. 19, *lib.* i. *line* 18.

It is in much request with pigeonfanciers, either for the purpose of domiciling their own stock, or attracting strays. The predilection of pigeons for this seed, the smell of which attracts them, is, it is said, to be almost insuperable.

CURDS.—Another of the component proximate ingredients of milk. When milk, either deprived or not of its cream, is mixed with certain substances, or allowed to stand till it becomes sour, it undergoes a change, called coagulation, dividing itself into a solid substance, called *curd*, and a fluid, called *whey*. This change in milk may be effected by several agents, such as alcohol, gelatine, and all astringent vegetables; by acids, and many neutral salts, as cream of tartar; by gum, sugar, and more particularly by the gastric juice, or a piece of rennet. This change is attributed to the affinity of the coagulating substance for water, the curd being principally albumen, having very little affinity for the same—a theory, however, which falls short of explaining the operation of the gastric juice: the infusion of a piece of rennet, or calf's stomach, not bigger than half a crown, will coagulate a quantity of milk sufficient for making a cheese of sixty pounds weight, although the quantity of coagulating matter cannot in this case exceed a few grains.

CURRANTS.—In commerce, currants are a small dried grape, properly, says Dr. Johnson, written corinths, from Corinth in Greece, where they were first propagated; but this place now produces no more, the plantations having been long neglected. They do not grow on bushes but on vines, like other grapes. —See *Raisins*.

Currants are at present brought chiefly from the island of Zante, in the Ionian sea. "There are," says Mr. Watkins, "few ships bound to the Adriatic, that do not touch here; some of them take in cargoes of currants. This rich and wholesome article of consumption is the dried fruit of grapes, which are peculiar to a few of these islands, and to part of the Morea, which carries on a considerable trade in this article. They are as inferior in size as superior in flavour to all others—I think them the most delicious I ever tasted. There are two sorts, the black and the purple. They are ripe in July, but are not gathered till August, when they are exposed to the sun till dried; after which put into hogsheads, and trodden down by naked feet, to compress, and to preserve them the better."—See *Watkins' Travels*, vol. ii. pp. 162, 328.

CUTTLE-FISH.—Hard of digestion, engendering gross humours, and fit only for strong stomachs.

CYDER.—An excellent drink made of the juice of apples, especially of the more common table kinds. Herefordshire and Devonshire, are famous for cyder; but much of that made in the latter county is of a harsh, sour, and watery nature, to which qualities is commonly imputed a kind of severe colic prevalent among the lower order of people. The Herefordshire cyder is so exquisite, that when the Earl of Manchester was ambassador in France, he is said frequently to have passed this beverage on their nobility for a delicious wine. There is a spirituous liquor drawn from cyder by distillation, called cyder spirit, to which the dealers in spirits can give the flavour of some other kinds, and sell it under assumed names, or mix it in a large proportion with foreign brandy, rum, or arrack, in the sale, without any danger of the fraud being discovered. The best cyder is said to be made from the red-streak apple, grafted upon the Jennet-moyle stock. Other cyders have various degrees of potency, and a great variety of flavour.

Cyder and Perry are, it is said, generally fermented and kept in leaden vessels, or at least the apples and pears are passed through leaden tubes; and the lead being readily dissolved by the acid, is gradually introduced into the body, which produces painful and dangerous colics, and frequently gives rise to the most desperate and incurable constipations, among those habituated to the free use of these liquors.

The varieties of apples which are grown and cultivated in the different fruit districts of the kingdom, for the purpose of making cyder, are extremely numerous. The following is a list of the most approved:—

Styre.
Coccagee.
Golden Harvey.
Red Streak.
Golden Pippin.
Queening.
Cowanne Red.

There have been several varieties of apples introduced from Normandy, and are thence called Red Normand, Yellow Norman, &c. Mr. Knight's new kind are also highly esteemed for cyder.

The Dowton Pippin.
The Grange Apple.
The Foxley, and
The Brengewood Pippin.

The merit of cyder will depend much on the proper separation of the fruits. Each kind should be collected separately, and kept till it becomes perfectly mellow. Although no criterion appears to be known when the proper point of maturity in the fruit may be ascertained with accuracy; there is good reason to believe that it improves as long as it continues to acquire a deeper shade of yellow.—See *Apples*.

D.

DANDELION (Dens leonis).—The medicinal properties of the dandelion, are diuretic and cathartic. Macerated in several waters, though somewhat aperient, it is very wholesome eaten as salad, and little inferior to succory or endive. The roots are burnt, and used, when ground, as coffee, to which they bear a closer resemblance, both in taste and smell, than any other vegetable.

DARNEL.—A rampant weed, that grows much among some barley, from indolence in the farmer, and most where it is sown with the seed barley. It does the least harm amongst malt, because it adds a strength to it, and quickly intoxicates, if there is much in it; but where there is but little, the maltster pays no attention to it for the sake of its inebriating quality.—There are other weeds or seed which are noxious to barley; but which are all subjected to the screen sieve, through which they escape.

DATES.—These are the fruit of the palm-tree. They are generally used by us medicinally; being detersive, astringent, and good against diseases of the throat. Our dates are brought to us from Egypt, Syria, Africa, and the Indies. The best come from Tunis and Persia. Among the Egyptians and Africans they constitute a principal article of food, but are deemed an unwholesome diet; and persons who eat great quantities of them are said to become scorbutic, and lose their teeth betimes. Some assert, however, that they are a great restorative to dry and exhausted bodies. One particular species, called *Palma Ægyptica*, has been much commended for its virtues against drought; and, as expressed by the poet,

> "Fruits of the palm-tree, pleasantest to thirst
> And hunger both." Milton.

Those that are new, large, sweet, full of juice, yellow, ripe, of a firm pulp, that is easily separated from its stone or kernel, and has not been attacked by the worms. The best come from Tunis. They are not much in use with us; but they are much eaten in Syria, Egypt, and the East Indies. They never become sweet in those parts of Spain that border on the sea, but retain an unpleasant and harsh taste. It is said that both bread and wine have been made from dates. They contain much oil, phlegm, and essential salt.

DEER.—See Venison.

DIET.—Food; provisions for satisfying hunger. A regular course of food or regimen. To eat according to the rules of medical writers.

So much does health depend upon temperance and simplicity of diet, that were more attention directed to the due cultivation of these subjects, fewer of those diseases which are the scourge of the human race, as well as the *opprobria medicorum*, would be seen or felt in society. To derive the greatest possible benefit from these two paramount considerations, it ought to be the study of all who value their health, to combine simplicity with temperance in the selection, preparation, and use of the various articles of food, animal and vegetable, which the bountiful hand of Providence has so profusely scattered over the face of the earth for the support of both man and beast. By simplicity in the choice and preparation of our alimentary materials, the appetite is not unnaturally provoked to consume more than the system requires for its proper sustenance; indigestion, the bug-bear of modern empiricism, is prevented, and the general health more securely and uniformly maintained. Temperance in diet, in its turn, supplies, in a great measure, the place of exercise, where opportunities for the latter may be wanting, an essential at all times indispensable to the preservation of sound wind and limbs. Independent then of its conservative qualities, temperance may be practised by all classes and conditions, at any time, place, or season. It is, indeed, a kind of regimen, upon which any individual may place himself without interruption to business, unnecessary expense, or loss of time. And as the rational subjugation of the passions strengthens the mind, so temperance in diet renders the body less subject to such turbulent emotions. These observations are applicable, not only to individuals who are naturally of a hot constitution, but even to those who control their appetites; because moderation is a great means of tranquillizing the mind.

Feeble individuals ought to eat little at a time and often, of some light nourishing food: the number of their meals should correspond with their want of strength; for it is less injurious to a debilitated person to eat a few mouthfuls every hour, than to make two or three hearty meals in one day. This observation, however, is liable to exceptions, as regards those who have habitually weak stomachs. There is no instance on record of any person having injured his health or life by drinking water with his meals; but wine, beer, and spirits have produced a much greater number and diversity of patients than would fill all the hospitals in the world. Such are the effects of intemperance in diet, particularly in the abuse of drink; for neither beer, wine, nor spirits, when properly brewed and distilled, and not sophisticated afterwards, are of themselves injurious, if used with moderation, and in a proper habit of body. It is a vulgar prejudice that water disagrees with many constitutions, and does not promote digestion so well as wine, beer, or spirits: on the contrary, water, pure water, on the experience and authority of some of the longest livers, is preferable to all brewed and distilled liquors, both in giving tone and activity to the organs of digestion, and preventing complaints which have their origin in acrimony and fullness of the blood.

It is an observation equally important as true, that by attending merely to a proper diet, a phlegmatic or emaciated habit may frequently be changed into one of a sanguine and robust condition; and the hypochondriac may so far be altered, as to become a cheerful, contented, and useful member of the community. People in the lower ranks of society enjoy the common advantages of existence more intensely than those in the higher walks of life. Wholesome food is acquired by moderate labour, which improves the appetite and digestion: hence sound sleep uninterrupted by corroding cares, refreshes the wearied limbs; a healthy progeny fills the cottage; and the sons perform the father's labour, making his hoary locks sit comfortably on his head. How vastly inferior to these blessings are the delicacies of the affluent, which are every where accompanied with real evils. Their appetites, in order to relish their food, must be stimulated by pungent sauces, which heat and vitiate the blood, and render the body liable to diseases. These excesses disturb their repose; and as a punishment for their vices, their sons, who ought to be the ornament and support of their families, contract diseases from their mother's womb, and are afflicted with infirmities through the course of a languid life, which seldom reaches to old age.

But the worst inconvenience resulting from epicurean modes of living is, that by supplying the body with superabundant nourishment, the faculties of the soul become stupified, and the passions inflamed; while the sparing and homely diet of the laborious poor neither oppresses the bodily functions, nor foster a propensity to vice. Hence, unless prudence be a constant attendant on opulence, it is, in these respects, better and more conducive to the preservation of health and prolongation of life, to live on a small fortune. Nor is nature to be deemed an unjust step-mother, but a most provident and beneficent parent. In short, to use the words of Lucan (*Book* ii. p. 381), it behoves a wise man, in every stage of his life,

"To hold the golden mean,
To keep the end in view, and follow nature."

The opinion of a physician of some celebrity in his time, is worthy of being recorded here on the subject of diet,—we allude to the late Dr. Cheyne, who died at Bath in the year 1742, in the seventy-second year of his age. He had been greatly afflicted in his time, having been a free liver; he succeeded, however, by means of a milk and vegetable diet, and the use of the Bath waters, to remove an accumulation of "morbid sensibility," bulk, and lethargy, which had nearly cost him his life. By strict adherence for upwards of two years to his milk and vegetables, his health was at length thoroughly established; and he confined himself almost entirely to this regimen during the remainder of his life. Of this regimen, and its effects, he himself thus speaks:—

"My regimen, at present, is milk, with tea, coffee, bread, and butter, mild cheese, salading, fruits, and seeds of all kinds, with tender roots (as potatoes, turnips, carrots), and in short, every thing that has not life (dressed or not, as I like it), in which there is as much or greater variety than in animal food: so that the stomach need never be cloyed. I drink no wine nor any fermented liquors, and am rarely dry, most of my food being liquid, moist, or juicy; only, after dinner, I drink either coffee or green tea, but seldom both in the same day, and sometimes a glass of soft small cider. The thinner my diet is, the easier, more cheerful and lightsome, I find myself. My sleep is also the sounder, though perhaps somewhat shorter than formerly under my full animal diet. But then I am more alive than ever I was, as soon as I awake, and get up. I rise commonly at six, and go to bed at ten."

In the year 1726 Dr. Cheyne published "The English Malady:" or a treatise on nervous diseases of all kinds. In the preface to this work he has made some important observations on the milk and vegetable diet, and low regimen: for that it might not be supposed that this diet and low regimen, which he recommended to valetudinarians, and those who laboured under nervous diseases, was thought proper by him for persons in full health and vigour, he asserted that he thought "thin, poor, cool, low diet, as improper and unnatural to a robust, active, strong, healthy man, as a gross, full, high diet, is for a poor, thin, low, valetudinary creature." He also says, "I here solemnly declare it, as my judgment and opinion (if it be worth the knowing) founded on the experience and observation of many years—

"1st.—That the diet and manner of living of the middling rank, who are but moderate and temperate in foods of the common and natural product of the country, to wit, in animal foods plainly dressed, and liquors purified by fermentation only, without the tortures of the fire, or without being turned into spirits, is that intended by the Author of nature for this climate and country, and consequently the most wholesome, and fittest in general for prolonging life, and preventing distempers, that the ends of Providence, and the conditions of mortality, will admit.

"2dly.—That no wise man, who is but moderate and temperate in this manner, ought on any account to alter the kind and quality of his diet, till he has duly and sufficiently tried what proper medicines can do, by the advice of the most experienced and skilful physicians.

"3dly.—That the changes that are advised to be made, ought to be duly and maturely considered, and entered upon by degrees, whether from a higher to a lower, or from a lower to a higher diet.

"4thly.—That strong, high, animal foods, and genuine defecated spirituous liquors, as begetting warm, full, and enlivened juices, urging on the circulation with force, and the secretions with vigour, in young, robust, healthy constitutions, are fittest and most effectual for mechanical and animal force, action, and labour: and so absolutely necessary for handicrafts, great fatigue, and military prowess."

It has been conceived that the diet of children and young people ought to consist principally of diluents, in order to facilitate the development of youth. Hence broths, and a large proportion of vegetables and milk, are the chief articles of their diet, and the only and best drink. Seasonings of all kinds should be avoided, and nothing taken of a stimulating nature, to induce too early maturity, before the constitution be ripened by years. With complete adolescence, the quantity of food necessary for the period of growth should be abridged; but from the active scenes of life in which the body is then engaged, the food should be of a more stimulating nature, with a proper portion of animal food, regulated according to circumstances: for instance, those who pursue a sedentary and studious mode of life should be more sparing in the use of animal food and stimulating drink; for by excess of nourishment to the body, the intellects are found to be proportionally weakened. Those of a firm and vigorous habit have the greatest disposition to inflammatory disorders. Excesses of all kinds, particularly in the use of fermented liquors, should be carefully avoided. The sanguine or plethoric constitutions should restrict their diet chiefly to vegetable food, and their drink to water. The phlegmatic admits a greater latitude in the use of stimulating diet than any other; and both seasoning and stimulating drink will prove less hurtful to such a constitution; the chief consideration is to guard against corpulence. Where a dry habit prevails, young meats, fruits, and fresh vegetables, form the best regimen; and, in point of drink, good wine, diluted with water, or home-brewed malt liquors, are to be preferred. On this subject, the following Epitome of Dietetical Precepts may be beneficially consulted.

a. When a larger quantity of food is consumed than the digestive organs can assimilate into chyle, it can never be converted into good nourishment.

b. Food too highly seasoned with salt or pungent spices and oils, corrupt the blood.

c. People of gross habits, and feverish constitutions, should eat sparingly. Unseasonable abstinence is also attended with bad consequences: for without a fresh supply of chyle, animal juices naturally acquire putrescency. Inanition produces fevers of the worst sort; as those who fast too religiously feel frequently, to their cost, the insidious consequences.

In all chronic disorders, such a quantity of food is to be taken as is sufficient to support, not overload, the stomach. The weak, emaciated, hectic, or consumptive, ought to observe the strictest regimen. To such, excess in any thing is attended with the most perilous consequences. Nature abhors discordant mixtures: fish, flesh, wine, beer, cider, cream, and fruit. These distend the bowels with wind, and prevent digestion.

Bread made of the purest flour of wheat nourishes much and binds the belly: mixed with bean flour it is opening and less nourishing. The farinacea are all antiseptics. Wheat bread, properly fermented, and well baked, is the most valuable part of diet.—See *Bread.*

Milk is already elaborated, prepared, and digested in the body of the animal. It is an extract of animal and vegetable food. It is replete with nutritious juices, and wants little else than the colour to be blood. Where feverish heat predominates, in costive habits especially, buttermilk and brown bread are timely specifics.—See *Milk.*

Sea-salt, moderately used, is very wholesome, and the reverse if taken in excess.—See *Salt.*

The flesh of animals in the prime of life, of such as are castrated, and not used to hard labour, is best. The flesh of graniverous birds is not so oily as that of water-fowls. Mutton is the best flesh for the delicate; beef and pork are proper only for the strong, and those who use hard exercise.—See *Food, Animal, &c.*

Pond fish, or such as are fat, are hard of digestion; such as are caught near the shore are lighter. Boiled fish is lighter than roasted.—See *Fish.*

Bitters bind the belly; acids gripe the bowels; salted things promote stool and urine; sweet things breed phlegm.—*Celsus.*

Onions, leeks, radishes, and all the alkalescents, are antiseptic; mustard and cress occasion a heat and difficulty of urine; celery is diuretic; aromatics heat; colewort and lettuce cool; cucumbers are cold, crude, and hard to digest; ripe fruits open the belly; unripe bind and gripe; pulses of all sorts are windy; honey promotes urine and stools, but gripes many; soft bread increases acidity in the stomachs of those troubled with heartburns; biscuits, less; confectionary and dainties tempt people too much, and are hard of digestion. Where the aliment ferments too violently, from putrescency of the stomach, acids, bitters, aromatics, and alkalescents are proper. If cold cacohymy be added to bad habits, the patient ought to abstain from farinaceous foods and jellies, because these increase the tenacity of the humours. If the body begins to be puffed up with watery humours, broths are sparingly to be used; roasted meats, and fresh-water fish, with generous wine, are indicated. If an acid acrimony abounds, as in young people, eggs, broths, and jellies are best. If the humours tend to an alkaline putrescency, barley broths, bread and milk, are the fittest food. Acidulated liquids for common drink; and, if broths are allowed, they should also be acidulated.—*Arbuthnot.*

It has been discovered that the body perspires but little while the stomach is too full, or too empty; that full diet is prejudicial to those who use little exercise, but indispensably necessary to those who labour much: that food, the weight of which is not felt in the stomach, nourishes best, and perspires most freely. That he who goes to bed without supper, being hungry, will perspire but little; and if he does so often, will be liable to fall into a fever. That the flesh of young animals, good mutton, and well-baked bread, are the best food. That the body feels heavier after four ounces of strong food that nourishes much, such as pork, eels, salt fish, or flesh, than after six ounces of food that nourishes little, such as fresh-fish, chicken, and small birds; for where the digestion is difficult, the perspiration is slow. That unusual feasting, frequently repeated, brings on a bad state of health. That the body is more uneasy and heavy after six pounds taken in at one meal, than after eight taken in at three. That he destroys himself slowly who makes but one meal a day, let him eat much or little. That he who eats more than he can digest, is nourished less than he ought to be, and hence becomes emaciated. That to eat immediately after excessive exercise, either of body or mind, is bad; for a body fatigued, perspires but little.—*Quincey.*

The diet and exercise of those advanced in years should be moderate, and both regulated according to the habit of body. *The gross old man* should take his exercise chiefly in the forenoon, with as little nourishment as possible. *The thin and spare old man* must have something light upon his stomach for breakfast, but should take his exercise after dinner. As regards taking cold, each must guard the parts most liable to its influence; the thin old man must go as cool as possible in the forenoon, at which time he will not be so apt to take cold.

An old man cannot safely part with flannel. Cornaro's rule will hold good in general for all, which is, to lessen the quantity of solid food as you advance in years, but to allow it to be more nourishing.

Habits that have been used but to a moderate quantity of any strong liquors, very rarely afterwards bear milk well; but if they will put as much cowslip wine as will half turn it, they may bear a small quantity of the clear liquor.

Chocolate is too heavy for an old person. Green tea will do for the gross man, but to preserve an appetite for dinner, use no butter at breakfast. Small beer, which is fine, or pure water, or such as has been filtered or boiled, are the best diluters at dinner: the gross old man may add a little wine to his water. Ale at supper is useful to old people; it helps to finish the digestion of the day, promotes sleep, and keeps the body laxative; it ought not, however, to be stale. Those who observe a very abstemious diet require it, should they not be old. An abstemious old man will never suffer much from the gravel or stone, if his body be kept open. The abstemious old man needs no other physic than the flour of sulphur, infusion of aloes, or an occasional dose of rhubarb: warm stockings in winter, woollen hose over all, and flannel. If warm strong liquors will not make him sleep, he will stand a bad chance from opiates, which occasion costiveness, the cause of numerous complaints. He must be his own physician, unless an accident happens.—*Celsus.*

Eggs are too heavy for old people; thin broths are better, and will best answer an old man's purpose, when he cannot digest meat. Asthmas come upon hearty feeders, and are cured by emetics and abstinence.—*Ibid.*

DIETETICS.—Belonging or relating to food. The medium of health and life.

The knowledge of those objects which relate to the preservation of the human body in its natural state, may be called the DOCTRINE OF HEALTH. Life and health, therefore, are the proper objects of this doctrine; as the second department of Medicine solely relates to the preternatural states of man, viz. *Disease* and *Death*, and forms a branch of professional study called PATHOLOGY. The compass of the former science, or an investigation of the objects included in the doctrine of health, must be very extensive. It furnishes us with rules and cautions with respect to every thing that ought to be done, or to be avoided, in order to remain in, and enjoy a state of health. This useful science is properly designated DIETETICS, *or a systematic view of all objects relative to health in general, and to food and drink in particular.* It includes the whole of what the ancient physicians understood by the singular appellation of the six NON-NATURALS, namely—

AIR, ALIMENT, EXERCISE, and REST,
THE PASSIONS and AFFECTIONS of the mind,
WAKEFULNESS and SLEEP,
REPLETION and EVACUATION.

These general heads, although they do not comprise, strictly speaking, every thing that relates to the different functions of the human body; they, nevertheless, contain all such conditions of life as are absolutely necessary, and the greatest part of those circumstances which are connected with the health and well-being of the individual; adopting the best and most rational means of ensuring this blessing, and of avoiding whatever may have a contrary tendency. Our mode of life is no longer that natural and simple one, which prevailed in the primitive ages of the world; as in the present state of society such habits are scarcely conceivable. Man in a state of nature had little occasion to attend to his health; he wanted no rules for its preservation; for as the seeds of diseases are rarely scattered in such a state, instinct would be to him in most cases a sufficient guide. Innumerable are the causes which have conspired to render the *true* knowledge of the means conducive to health, difficult in the acquisition, among the chief of which are probably the following, which include most of the subordinate particulars:—

1. The present very artificial manner of living:

2. The infinite variety of human employments.

3. The different modes of dwelling and dressing.

4. The endless variety of substances used as food and drink.

5. The great diversity of national customs and manners.

6. The difference of climates and situation.

All these circumstances, and many more, have a greater or less influence, conjointly or separately, not only on the passions, inclinations, and instinctive desires of individuals, but also on the general state of the health and physical welfare of a people. By the present mode of living we are exposed to diseases wholly unknown in the first ages of the world, when

> "The friendly limpid draught, the temperate meal,
> Ne'er asked the aid of bolus or of pill."

People suffer from a variety of complaints originating either in artificial habits, or the constraint under which they labour, in consequence of blindly complying with the caprice of custom or fashion, without perhaps apprehending any ill consequences from such pernicious practices.

Many ingenious writers have lately endeavoured to point out the disadvantages originating in causes apparently trivial: for instance, the fashion of using paint, hair-powder, and pomatum; of wearing ill-shaped shoes, tight-laced stays, ligatures of every description round particular parts of the body, &c.; all these have deservedly incurred severe ridicule and pointed censure. The custom of applying lead to earthen vessels (see *Lead*), has not escaped their attention; the danger, however, resulting from the use of that substance, appears, not like copper (see *Copper*), to have been somewhat exaggerated. Hence it is, that writers (many of whom write without reflection, and pin their faith too implicitly on the sleeves of their predecessors), with the best intentions have sometimes, from an excess of zeal, descanted on the worst side of the question only, by attributing to certain things many dangerous qualities, which, in fact, are owing to a great diversity of circumstances. This partial method of inquiring into the sources of the evil is, generally speaking, a serious error; as it not only leads to false conclusions, but also warps the attention from other pressing injuries, to which, in a more tranquil and unprejudiced state of mind, our care might be directed.

To prevent, however, any misapplication of those rules, which are established by the accumulated observations of ages; it may not be improper, under this head, to introduce some general remarks, relative to the individual use and advantage to be derived from a connected view of dietetics. It is, in fine, not so much the healthy, as the valetudinary and infirm, who stand in need of minute precepts for their conduct,—and even the latter ought not to engage too earnestly in compliance with them; since it is only a very limited number that require such nice attention. A vigorous and persevering mode of inuring ourselves to the unavoidable difficulties and diversified accidents of life, is of greater importance to the preservation of health, than any dietetical precepts whatever. Man is capable of undergoing all the vicissitudes and inconveniences of air, weather, and climate; he can digest any kind of food, if his stomach has not been wantonly debilitated; and he can sustain the severest bodily exercise and labour, without paying too minute attention to time or regularity, when his employment or duty renders exertion necessary. But he, who, from his infancy, has been treated with extreme tenderness, or who, after having been previously accustomed to a hardy mode of life, is seized with the whim of bestowing too much care on his health, will suffer from the most trivial inconveniences, and catch cold at every change of the air; every heavy or high seasoned dish will be oppressive, and the smallest deviation from the rules of temperance will indispose him. Yet, by the same rules, every healthy person will learn, that the grand secret of preserving himself in that state, consists principally in the art of moderating his desires and enjoyments. Thus may we arrive at the knowledge of such things as are generally conducive to the welfare of the body—more than which ought not to be expected.

"Refined and wire-drawn systems of feeding," says an elegant author, "are as unnatural as the fear of death, which often proves mortal, and which sets people on methods to save their lives which infallibly destroy them." This is a reflection made by some historians upon observing, that more are killed in a flight than in a battle, and may be applied to those multitudes of imaginary nervous and sick people, who ægrotise by the very means of health, who ruin their constitution by physic, and throw themselves into the arms of death by striving to avoid it—"a method not only dangerous, but below the practice and dignity of a rational being. To consult the preservation of life, as the only end of it; to make our health our business; to engage in no action that is no part of a regimen or course of physic, are purposes so abject, mean, and unworthy of human nature, that a generous soul would rather die than submit to them. Besides, that a continual anxiety for life vitiates and corrodes all its enjoyments, and casts a melancholy and lugubrious gloom over the whole face of nature; as it is impossible we should take pleasure or delight in any thing we are every moment afraid of losing."—*Addison.* By these observations, it is not meant to attach blame to any one for taking a proper care of his health—a blessing much sooner lost than recovered; on the contrary, "a cheerfulness of mind and capacity for business, are in a great measure the effects of a well-tempered constitution; a man cannot take too much pains to cultivate and preserve it; that this care which we are prompted to, not only by common sense, but by duty and instinct, should never engage us in groundless fears, melancholy apprehensions, and imaginary evils, which are natural to every man who is more anxious to live than to know how to live. In short the preservation of life should be only a secondary consideration, and the observation of it our principal aim. If we have this frame of mind, we shall take the best means to preserve life, without being over solicitous about the event; and shall arrive at that point of felicity which Martial has mentioned as the perfection of happiness—namely, that of neither fearing nor wishing for death."—*(Ibid).* To conclude, rules of health, universally applicable to the state of every individual, are not discoverable in nature; nor can they be derived from any experimental knowledge we possess of corporeal objects. The best general precept is, for every one to study himself, and his own particular constitution, in order that he may choose and regulate his life accordingly; and that he may make his own experience his guide, most suitable to it, his mode of life, and particular circumstances.

DIGESTION.—The fluid and solid parts of the body are continually wasting, it is therefore necessary that they should have a constant supply. For this purpose all animals are provided with powers for taking in food and digesting it. Substances fitted for food are such as contain either oily, gelatinous, or saccharine parts. Animal matters are chiefly furnished with the two former, and vegetable with the two latter. Some animals appear designed to live upon animal food only; others upon vegetable; and others again upon both animal and vegetable, promiscuously. Of the latter class is man.

All solid foods undergo the process of mastication, or chewing, before they are swallowed. In this act they are cut down by the teeth, and mixed with the saliva. (See *Saliva*). In the operation of chewing, these are pressed upon by the muscles of the jaw, and made to discharge their contents more plentifully than at other times. The food thus fitted for swallowing, is thrown by the action of the tongue and other muscles, into the gullet, or œsophagus, a muscular tube, leading from the mouth to the stomach. The contraction of the gullet propels the food into the stomach, which, in man, is single. (See *Stomach*). The food remains some time in the stomach, where it undergoes further changes, proceeding partly from the heat of the place, partly from the pressure of the muscular coat of the stomach, and partly from the mixture of the gastric juice.

(See *Gastric Juice*). By these means it is reduced to nearly a uniform pulp, and suffers a degree of fermentation, by which its properties are altered and a quantity of air is extricated from it. The action of the stomach at length presses it out into the beginning of the intestinal canal. (See *Intestines*). It is propelled through this winding tube by means of the peristaltic motion, which is a successive contraction of the muscular coat of the intestines upon their contents; and may be likened to the crawling motion of a worm or caterpillar. When arrived a little below the stomach, the food receives the bile, (see *Bile*); by the mixture of which, it acquires a yellow tinge, and has its solid parts still more perfectly dissolved. At the same time it also receives the pancreatic juice, a liqour separated by the pancreas, and resembling the saliva, which serves further to dilute it. From the internal surface of the intestinal canal, especially that part called the small intestine, arise innumerable minute vessels, with open mouths. These are furnished with numerous valves, and flow together into larger and larger trunks, till at last they all terminate in the thoracic duct. They are called lacteals. (See *Lymphatics*). By means of these vessels, all the nutritious part of the food, now putting on the appearance of cream, and called the chyle, is absorbed from it in its long course through the intestines. (See *Chyle*). The lymph and chyle are therefore carried together to be mixed with the blood, from the thoracic duct, into which the lymphatics terminate, in the left subclavian vein. The remainder of the food now becomes fœtid, and turned into mere excrement, is propelled through the rest of the intestinal canal, and discharged per anum.—See *Chyme*.

DIGESTION, Theories of.—We are still ignorant of the chemical changes which the aliments undergo in the stomach. It is only at different times that explanations on this subject, more or less plausible, have been attempted to be given. Ancient philosophers asserted that the food putrefied in the stomach; Hippocrates attributes digestion to *coction;* Galen gave *attractive*, *retentive*, *concoctive*, and *expulsative* faculties to the stomach; by the assistance of which he thought to explain the process of digestion. The doctrine of Galen prevailed in the schools until the middle of the seventeenth century, when it was attacked and upset by the fermenting chemists, who established a particular *effervescence* and fermentation in the stomach, by means of which the aliments were macerated, dissolved, precipitated, &c. This system had a very short career; but it was superseded by ideas much less consonant with reason. It was afterwards established that digestion was nothing more than a *trituration* or bruising of the food, effected by the contraction of the stomach; and it was supposed that an innumerable multitude of small worms attacked and divided it. Boerhaave conceived he had hit the truth by combining the different opinions on this subject that reigned before him. Haller differed from the sentiments of his master, by considering digestion merely as a simple *maceration*. He was aware that vegetable and animal matter, steeped in water, was not long before it was covered over with a soft and homogeneous membrane; and he thought that the aliment underwent phenomena analogous to this, by macerating in the saliva and fluid secreted by the stomach.

The experiments of Reaumur and Spallanzani have thrown a different light on the process of digestion. They made experiments upon animals, and demonstrated the falsity of the ancient systems. They shewed that aliments, enclosed in hollow metallic balls, pierced with small holes, were digested equally, as if they were at liberty in the cavity of the stomach. They proved that the stomach contains a particular fluid, which they called *gastric juice*, and that this fluid is the principal agent in digestion; the properties of which, nevertheless, they considerably exaggerated, and they were no less led into error when they imagined they had explained the digestive process as a *dissolution;* for, in not explaining this, they explained still less the alteration of the aliments in the stomach. We shall not occupy the attention of our readers by the easy exposition and refutation of these different hypotheses, which may be seen in every work that has hitherto treated the subject in a rational manner,—our object being to simplify practical knowledge, not to promote controversial disputation.

DIGESTION, Organs of.—An important distinction exists between animals and vegetables, according to the manner in which they receive their nourishment. Vegetables are continually absorbing matter from the soil, which immediately passes into the sap-vessels, where it is soon changed by respiration and secretion. Animals, on the contrary, with very few exceptions, take in food at intervals, and retain it in their stomach for a considerable time, where it undergoes a chemical change, which constitutes the function of digestion, the first step in the general process by which animal matter is formed.—There is, indeed, no function in the animal economy that presents us with such elaborate machinery as that of the function of digestion; its complexity and extent, however, have been found to vary in proportion to the nature of the alimentary substance upon which it is intended to act. Should it differ considerably in composition from the materials of which the animal is constituted, the changes it has to undergo before it can be adopted for the support and reparation of the body which is to receive it, must consequently be more considerable, hence the organs are more extensive and elaborate in animals that feed on herbage, than such as subsist on animal food; while man, who draws his supplies of nourishment both from the animal and vegetable kingdom, possesses an intermediate organisation. His organs of digestion, therefore, may be said to consist of

1.—A long canal, which extends from the mouth to the anus, and varies in the diameter of its different parts, according to the distinct duties which each is destined to perform—capable also of contracting or expanding according to the circumstances under which they have to contend.—See *Intestines.*

2.—Various glands, or secreting organs, for the preparation of the liquids, which are required for acting on the alimentary substances.—See *Saliva. — Gastric Juice. — Bile. — Pancreas.*

3.—Vessels for carrying into the circulating medium the nutritive product of the process of digestion.—See *Lymphatics.*

4.—The lungs, which complete its assimilation with the blood.—See *Respiration.*

5.—The kidneys and skin, which carry away the remaining portion of the alimentary substance as excrementitious.—See *Kidneys.*

These different organs of digestion are not only intimately related to each other, but they exhibit an extraordinary, and frequently an astonishing degree of sympathy with the circulating medium and the brain. For instance, there is no organ of the body that is not directly or indirectly affected by the operations of the stomach; it need not, therefore, be matter of surprise, that an impression made upon this viscus by a medicinal agent, or by any alimentary matter, should afford the means of exciting an action in the most remote parts of the machine; nor can it be a matter of surprise, that the aberrations of this central viscus should give rise to the greater number of diseases with which the body is afflicted; nor that these applications should be so effective, which are directed for their cure, through the medium of its sympathies. The stomach suffers equally in its turn from the derangement of different organs; sprains of tendons, ligamentous structures, blows on the head and other parts, produce sickness at the stomach, and frequently direct vomiting. The sympathy between the stomach and the matrix, and thence to the brain, is no less unequivocal.—See *Stomach.*

To distinguish between the sympathetic and primary affections of the digestive organs, is a mystery of the greatest practical importance; and the profession is under much obligation to Mr. Abernethy, the late distinguished surgeon of St. Bartholomew Hospital, for his endeavours to show how the stomach and bowels are liable to become affected from local derangement, and *vice versa.*—See *Indigestion.*

From the preceding observations, it will be seen that the changes which the food undergoes in the digestive organs of the more complicated animal, bipeds as well as quadrupeds, are three-fold; and distinct organs are allotted to each of the three processes. Digestion takes place in the stomach; chylification in the small intestines; and a third process hitherto undenominated, is performed in the large intestines. It is probable, therefore, that in some cases, one set of organs may be more disordered than the others, consequently one of the above-mentioned processes may fail more than the rest. For instance, the stomach may digest the food in a healthy manner, although the intestines do not perform their share of the changes which they ought to effect. The food is converted in the stomach into a viscid semi-transparent substance, called chyme; and that the change is produced by the agency of the gastric juice, secreted, that is, furnished by the blood, like every other secretion, by the exhaling vessels of the very numerous arteries strewed over every part of the stomach, is a point as well ascertained as any in physiology.—(See *Secretion*). In a state of health this conversion takes place without any appearance of that rational decomposition which animal and vegetable matter would ordinarily undergo in a warm place. When, however, digestion is imperfect, gaseous fluids are extricated from the alimentary mass. Vegetable food become acid, and oils becomes rancid. Uneasy sensations are also felt, and undigested aliment may be observed in the fæces. " A disordered state of secretion either as to quantity or quality, will be the natural effect of irritation of a secreting organ. This is evidently the case with the tongue; and we may with great probability conjecture, that the same consequence also takes place in the stomach. As likewise the juices of the stomach are the immediate agents of digestion, that bowel must be disturbed in proportion, as its secretions are deficient or vitiated. If undigested matter pass from the stomach into the intestines, it can scarcely be supposed that these powers are capable of converting it into chyle; and it may become irritating to those organs, in consequence of the chemical changes which it may then undergo. When indigestion is imperfect, animal and vegetable substances experience considerable chemical changes before they leave the stomach; and similar changes may continue to take place during the time they are detained in the bowels, unless counteracted by the powers of the digesttve organs—powers which seem chiefly to belong to the fluids, which are secreted into them.—Vide *Abernethy, on the Consti-*

tutional Origin, &c., of Local Disease, p. 27.

DOMESTIC WINES.—Our domestic wines, commonly called *sweet*, or *made wines*, are chiefly made from raisins or dried grapes of Spain or Portugal. Francis Chamberlayne first made the attempt in 1635, and obtained a patent of fourteen years, in which it is alleged, that his wines would keep good during several years, and even in a voyage under the very line.—(See *Rymer's Fœdera*).

The art of making wine was very successfully reviewed several years ago, by Mr. Beaufoy, and the foreign wines most admirably mimicked. Such is the prodigality and luxury of the age, that the demand for many sorts exceeds, in a great degree, the produce of the native vineyards. We have the most skilful and ingenious fabricators, who kindly supply our wants. It has been estimated, that half the port, and five-sixths of the white wines consumed in the capital, have been the produce of home wine presses. The genial and fertile banks of the Thames, yield almost every species of white wine; and, by a wondrous magic, the late Mr. Beaufoy poured forth the materials for the rich Frontignac, to the more elegant tables; the Madeira, the Calcavella, and the Lisbon, into every part of the kingdom. "There is in this city," (London), observes a certain chemist, who has written extensively on adulterations, "a certain fraternity of chemical operators, who work underground in holes, caverns, and dark retirements, to conceal their mysteries from the eyes and observation of mankind. These subterraneous philosophers are daily employed in the transmutation of liquors, and by the power of magical drugs and incantations, raising under the streets of London the choicest products of the hills and valleys of France, they can squeeze claret out of the sloe, and draw champagne from an apple; an art which Virgil seems to have had in view in that remarkable prophecy,

"Incultisque rubens pendebit sentibus uva."—Eclog. iv. 29.

"The ripening grape shall hang on every thorn." DRYDEN.

See *Wine*.

DOREZ.—To wash poultry, &c., with yolk of egg well beaten.

DORURE.—Yolks of eggs well beaten.

DRINK.—Drinks may be divided into common water, vegetable infusions, and decoctions; fermented liquors, animal fluids, animal infusions, and decoctions. The vegetables employed for infusions and decoctions, as drink, are chiefly tea, coffee, chocolate, and some other herbs, as sage, mint, balm, &c., fermented and distilled liquors, &c. which see. Among the animal substances may be enumerated various soups, as beef-tea, veal, mutton, and chicken broths. —See *Broths*.

As regards the property and quantity of drink, it is more necessary to the support of animal life than eating; since drink is indispensably necessary to the solution and digestion of food. Those who drink too little, for instance, people of sedentary habits, and particularly women, are subject to complaints of indigestion. Sufficient drink prevents the blood from becoming thick, and also the smaller vessels from becoming obstructed; it dilutes the acrid particles of the blood generated in it; and it promotes the necessary secretions, such as the bile and gastric juice.

People ought to drink only when they are thirsty, and to desist when that thirst is quenched; though this is seldom the case, because many of our liquors stimulate the palate. Pure water, therefore, is an inestimable beverage, as it will not induce us to drink more than is necessary. The fluid aliment should be in greater proportion than the solid; since the quantity of our fluids far exceeds that of our solids, and consequently, there must be secreted more fluids than solids. The general rule in this case, though it cannot be accurately observed, nor is it applicable in every instance, is to take about double the proportion of liquid to the dry food. There are various circumstances, such as the season of the year, the weather, cold, heat, the nature of our food, &c. which regulate the quantity of drink at one time more than another. Thirst, however, is as good if not a better guide than hunger, and he who is accustomed to drink water only, will not easily transgress the measure, if he drinks as often as nature calls upon him. With a proper choice of food every one should drink conformably to his wants. Hence it is needless to recommend water as a beverage to persons who will not be persuaded to change their irregular modes of eating.

The more is eaten, and the drier the food, the more ought to be drunk. The phlegmatic have less inclination to drink than those of a sanguine and choleric temperament. The laborious ought to drink more than the sedentary, and still more in summer than in winter, to supply what is lost by perspiration.

In the morning there is generally an inclination to drink after getting out of bed, which is gratified by tea, coffee, or warm liquors. Water might be a more proper drink at this time, and it might only be disagreeable to those whose stomachs are deranged by the habitual use of warm liquors and hot rolls. A glass of pure fresh water, and a short time after it, a piece of bread with some fruit, or even butter, would afford a very wholesome breakfast, by which the stomach and intestines might be cleared out, the blood and humours refreshed, and the whole body strengthened. If the stomach be not loaded with mucus, or relaxed by tippling, a basin of sweet cows' milk, with a piece of wholesome stale bread, is an excellent breakfast in spring and summer.

To drink much at night, previous to going to bed, is extremely hurtful; or to drink immediately before a meal is improper, because the stomach is swelled and rendered less fit for the digestion of food. It is no less objectionable to drink much during meal-time; as the stomach is thus rendered incapable of receiving the portion of aliment. Cold water, or beer, does not well agree with warm victuals; and the teeth are injured by taking hot and cold substances in immediate succession. In the hot weather of summer, it is scarcely possible to delay drinking till dinner be finished; and it is then the less hurtful, as the bile, which serves to dissolve the victuals, then requires greater dilution. In winter, unless one eat very dry and salted provisions, the inclination to drink is less sensible. But if we must drink in the intervals of eating, it would be most conducive to digestion to drink water only, and in small quantities; as pure water, during the time of eating, is more proper, because it agrees with all dishes, without exception. A glass or two of wine, nevertheless, during dinner, particularly for the aged and debilitated, is a proper stimulus, and conducive to digestion.

Some dietetical writers advise us not to drink without eating something; but those who only drink when nature requires it, have no occasion to eat every time they drink. Persons, on the contrary, who are once accustomed to drink more than is necessary, or to use hot, stimulating, and intoxicating liquors, would do well always to eat some bread or other solid food along with them. Indeed, we ought to begin to drink only after an appetite for food is satisfied, and then it should be done gradually during digestion; the process of which may be disturbed by large draughts of liquor, which occasion fermentation and flatulency. Excess of drinking overloads and oppresses the stomach, by distending it too much; but it is not nearly so hurtful as too much food. Every beverage relaxes the stomach; and persons whose bowels are not sufficiently elastic, should be careful in the quantity they drink; for an immoderate proportion of it may weaken digestion, dilute the fluids too much, and conduct the fluid too quickly through the alimentary canal. An undue portion of weak drink renders the mass of blood too thin and watery; from a thin blood arises also a weak alimentary fluid, consequently, a general debility of the body, and relaxation of the urinary and other passages.—See *Thirst.*

Too little drink, on the other hand, is equally improper; digestion is weakened; many parts of the food remain undissolved, and are not converted into chyle, because the proper means of diluting them are wanting; the blood becomes thick and viscid; and finally, the secretions and excretions are not duly performed, in consequence of the different canals being too dry and contracted.

Wine, cyder, perry, and all fermented liquors, are antiseptic. When beer neither oppresses the stomach, nor binds the belly, but passes freely by urine, it may be allowed. When it generates wind, passes sluggishly, or generates stony concretions, it ought to be prohibited. Wine drank too freely, weakens the man, as may be seen by his actions. Sweet wines promote stools, but they excite flatulency and thirst; they promote expectoration, but impede urine. Sharp austere wines are good when the body is loose, provided there be no affection of the head, no impediment in spitting, or making water. Pure wine is best for the stomach and bowels, diluted with water; and agrees best with the head, breast, and urinary organs. Strong Spanish, or Hungarian wines, strengthen the stomach.—See *Tea.—Mineral Waters.*

The diversity of drink is nearly as great as that of the solid aliment. Water itself is of very different qualities, according to the particles with which it is impregnated, and the places from which it is obtained. That of wells, springs, rivers, lakes, swamps, and the various mineral waters, all differ in their sensible properties. Even cold and warm water produce different effects. The former when moderately used, strengthens the stomach, and only proves debilitating when it is drunk in too large quantities. Warm water is always relaxing, and still more so when taken in copious draughts; it remains longer in the stomach than cold water, and consequently is more oppressive: cold liquor stimulates the stomach, but warm drink diminishes its elasticity.—See *Water.—Mineral Waters.—Sea Water.*

If the stomach be over-charged with liquids, and its elasticity weakened, a glass of strong wine, or other spirituous liquor, may remedy this inconvenience. Water can only be so far called nourishing, as it tends to supply the aqueous parts we are continually losing. It is the basis of all other fluids, and the greater proportion of water they contain, the better is digestion promoted.—See *Wines.—Malt Liquors.*

The word drink may, in a manner, be applied to all sorts of liquid foods —such as broths, eggs in the shell, milk, and others, of which we have treated. It is in this sense that Hippocrates, (Aphor. xi. Sect. 2), says, *Facilius esse refici potu, quam ciabo—i. e.* We are sooner recovered by liquid than solid aliment. He prescribes those foods which ought to be taken by persons recovering from sickness; and for which there is much reason; for, besides that liquid foods are much easier digested, and agree better with their stomachs which have been debilitated by sickness, they are also more easily distributed into all the parts that want recruiting. The school of Salernum takes the word drink in the same sense as Hippocrates, in the following line:—

Ut vites pœnam, de potibus incipe cœnam.

By this verse we are given to understand, that we ought always to begin our meals with liquid foods, as being those which are easiest of digestion, and stay the shortest time in the stomach, but give a free passage to more solid aliments that come after; and from hence, perhaps, arose the custom of beginning meals with soup. Notwithstanding these observations, we do not, in this place, take the word drink in the sense now mentioned; we merely consider it as a liquid substance, which used to quench thirst, assist digestion, and the distribution of the solid foods; and last, though not least, to repair the loss we are continually sustaining, of the moist and watery parts of our humours.

DRINKABLES.—Substances in a fluid state; as water, wine, beer, and the like.

The blood and other fluids being in continual agitation in our bodies, the watery parts of which are continually dissipated, either by transpiration or urine, it is necessary that this loss should be repaired; for without which the most volatile and exalted principle of the humours being no longer extended, and separated from one another by watery particles, and having, consequently, acquired too much force and activity, they would cause an excess of rarefaction in the humours, and impart an insupportable heat to the solid parts. Now in order to prevent these inconveniences, which in a short time would destroy both the solid and fluid parts of our body, wise and provident nature gives us timely notice of the indispensable necessity we have of drinking, by means of a certain pungent or irritating sensation, which causes thirst, or a desire to drink.—See *Drink*.—*Thirst*.

DRY-SALTING,—*The act of preserving Animal Substances from Putrefaction.*—In the preservation of animal substances from putrefaction, which is of the utmost importance to the world in general, and to the remote grazing districts, as well as to certain individuals in particular; it enables the grazier to dispose of his live stock, on which navigation and foreign commerce depend, and private individuals to preserve their superfluity. All kind of animal substances may be preserved by salt; though beef and pork are the only staple commodities of this kind. The pieces of the animal, in general, best suited for salting, are those which contain fewest of the large blood-vessels, and are most solid. By some, the glands are recommended to be cut away: it is also said, that without this precaution, meat cannot be preserved; but this is a mistake, as the salted udder and glands of the tongue can testify. Salting is performed in different ways, either by dry-rubbing, or by immersing the meat in pickle, previously prepared. The meat will keep longer by dry-salting, but it is more altered in its valuable properties; in the latter way it is more delicate and nutritious.

To make a Pickle strong enough to preserve any Meat:—

Take

Six pounds of salt,
One pound of sugar,
Five ounces of salt-petre.

Boil them in four gallons of water, and let them stand to cool.

To use this, which is essential, either a heavy board or a flat stone must be laid upon the meat. The same pickle may be used repeatedly, provided it be occasionally boiled up with additional salt, to restore its strength, diminished by the combination of part of the salt with the meat. By boiling, the albumen, which would cause the pickle to spoil, is coagulated, and rises in the form of scum, which must be carefully removed.

Dry-salting is performed by rubbing the surface of the meat all over with salt; and it is generally believed that this process of salting is promoted if the salt be rubbed in with a heavy hand; and, on the contrary, it is said, that in very hot countries, for instance, in Jamaica, where it is so necessary that the action of the salt should take place as quickly as possible, the mode of salting is to place the meat on two sticks over a tub of water, with the small end uppermost, and to cover it with a heap of salt, which penetrates through the veins and arteries, and among the fibres of the meat, in a state of saturated solution. However this may be, it is almost certain that very little salt penetrates, except through the cut surfaces, to which it should therefore be chiefly applied; and all holes, whether natural or artificial, should be particularly attended to. About a pound of the best coarse-ground St. Ube's salt should be allowed for each twenty-five pounds of meat, and the whole previously heated, and rubbed in at once. When laid in the pickling-tub, after the above process, a brine is soon formed by the salt dissolving in the juices of the meat, which it extracts, and with which the meat should be rubbed every day, a different side being turned down. In ten or twelve days it will be sufficiently cured.

For domestic use, the meat should be kept until its fibres become short and tender, instead of being salted as soon as it comes from the market, as these changes do not take place after it has been acted upon by the salt. But in the provision trades,—the expedition with which the animals are slaughtered, the meat cut up and salted, and afterwards packed, is astonishing. By salting the meat while still warm, and before the fluids are coagulated, the salt immediately penetrates, by means of the vessels, through the whole substance of the meat, hence meat is admirably cured at Tunis, even in the hottest season; so that Mr. Jackson, in his "Reflections on the Trade of the Mediterranean," recommends ships being supplied with provisions at that place.

A mixture for eight cwt. of Beef.

Take—

Half a pound of black pepper.
Half a pound of red or cayenne pepper.
Half a pound of the best saltpetre.

All beat or ground very fine, mix them well together, and then again with the addition of about three quarts of very fine salt.

Process of Dry-Salting.—As pieces are brought from the person cutting up the bullock, they are first sprinkled with the spice, a little of which is introduced into all the thickest parts, and if this cannot otherwise be done, small incisions are made into each with a knife. The first salter, after rubbing salt and spice into the meat, should take and mould the piece, in the same manner as washing a shirt, upon a board; this may be very easily done, and the meat, having been lately killed, is soft and pliable; the moulding opens the grain of the meat, which will make it imbibe the salt and spice much quicker than the common method of salting. The first salter hands his meat over to the second salter, who moulds and rubs the salt well into the meat, and, if he observes occasion, introduces the spice; when the second salter has finished his piece, he folds it up as close as possible, and hands it to the packer, at the harness-tub, who must be stationed near him. The packer must be careful to pack his harness-tubs as close as possible. All the work must be carried on in the shade, and where there is a strong current of air, there the harness tubs ought to be placed, this being a very material point in the curing of meat in a hot climate. In this manner meat may be salted with the greatest safety, when the thermometer in the shade is at 110° the extreme heat assisting the curing. A good sized bullock of six or seven hundred weight may be killed within the hour. The person who attends with the spice near the first salter, has the greatest trust imposed upon him; besides the spice, he should be well satisfied that the piece is sufficiently salted, before he permits the first salter to hand the piece over to the second salter.

All the salt should be very fine, and the packer, besides sprinkling the bottom of his harness tub, should be careful to put plenty of salt between each tier of meat, which is very soon turned into the finish pickle. The pickle will nearly cover the meat as fast as the packer can stow it away. It is always a good sign that the meat is very safe, when the packer begins to complain that his hands are aching with cold. By the method here detailed, there is no doubt that the meat is cured in three hours from the time of killing the bullock; the saltpetre in a very little time strikes through the meat; however, it is always better to let it remain in the harness tubs till the following morning, when, on opening them, it will have an exceedingly pleasant smell. It is then to be taken out, and packed in tight barrels, with its own brine.

Beef and pork, in a less degree, properly salted with salt alone, acquire a green colour, but if an ounce of saltpetre be allowed to each five pounds of salt, the muscular fibre takes on a fine red colour; this apparent improvement, however, is more than compensated by its becoming harder and harsher to the taste, to correct which a proportion of sugar or molasses is added; but the red colour if desired may be given without hardening the meat, by the addition of a little cochineal.

Salted meat is either preserved, immersed in pickle in close vessels, or dried, when it gets the name of bacon, ham, or hung-beef; by being kept immersed in pickle, meat rather gains than loses weight. The drying of salt meat is effected either by hanging it in a dry and well warmed place, or by exposing it at the same time to wood smoke; which gives it a peculiar flavour, much admired in Westphalia hams, and Hamburgh beef, and which also tends to preserve it by the antiseptic action of the pyrolignic acid. When meat is to be hung, it need not be so highly salted.—See *Beef, Hams, &c.*

Admiral Knowles's recipe to salts meat:—

As soon as the ox is killed, let it be skinned and cut up into pieces fit for use, as quick as possible, and salted whilst the meat is hot; for which purpose have a sufficient quantity of bay-salt and saltpetre pounded together and made hot in an oven, of each equal parts; with this sprinkle the meat at the rate of about two ounces to the pound; then lay the pieces on shelving boards to drain for twenty four hours. Then turn them, and repeat the operation, and let them lie for twenty-four hours longer: by this time the salt will be all melted, and have penetrated the meat, and the pieces be drained off.

Each piece must then be wiped dry with clean coarse cloths, and a sufficient quantity of common salt, made hot likwise in an oven, and mixed when taken out, with about one-third of brown sugar; the casks being ready, rub each piece well with the mixture, and pack them well down, allowing about half-a-pound of the salt and sugar to each pound of meat, and it will keep good for several years and eat well.

It is best to proportion the casks or barrels to the quantity consumed at a time, as the seldomer it is exposed to the air the better. The same process does for pork, only a smaller quantity of sugar and more salt will answer; but the preservation of both depends equally on the meat being hot when first salted.—See *Fish*, *Preservation of Pork*, *&c.*

DUCK.—There are two sorts of ducks, the tame and the wild; the flesh of the last is brown and reddish, and is more valued for its goodness and flavour than the tame duck, which is also more difficult of digestion than the former; although both are nourishing enough, and are, as a food, both solid and durable. It has been said that feeding upon the meat of ducks, gives a florid complexion, as well as improves the voice; but of these rare qualities we cannot say anything of our own knowledge. Both the wild and tame duck agree in cold weather with young hale people, who are used to most exercise, and have a good stomach.—See *Poultry.*

The goose and duck resemble each other with respect to the substance of their flesh, which produces nearly the same effect. The wing of a duck, as well as that of a goose, is excellent food; and Martial, by the following lines, shews what were the parts of a duck most in esteem for the quality of their flavour:

"Iota mihi ponatur anas, sed pectore tantum,
Ex cervice sapis; cætera redde coquo."

The teal is classed among the number of wild ducks, of which it is a particular species; and of these there are two sorts, the one small, and the other large; the small, which is most in use for food, resembles in every thing the common duck, with the exception that its not so large, but is of a more agreeable taste, and easier of digestion.

EELS.—The eel is a well known fresh water fish: sometimes it is found in the sea, not that it is produced there, but because it goes often out of rivers into the sea, and thence back again. It delights in pure running waters, though they are found in great plenty in ditches, and other stagnant places, where they arrive at considerable perfection. Eels are said to live out of the water for five or six days, provided the north wind be blowing at that time.

The eel is a light, nourishing aliment, and much in use. They are eaten fried or boiled; in the former state they are reckoned the most wholesome; they require to be well seasoned, and a glass of generous wine is recommended after them, in order to assist digestion. They agree at all times with young people of a bilious and hot constitution, who abound with thin and sharp humours, provided they have a healthy stomach, and are used in moderation. Eels are sometimes salted, for the better keeping of them, by which process they are rendered still more wholesome.

The fat of an eel is a good unguent to apply to pustules of the small pox, also in hemorrhoids, and to make the hair grow. The oil of eels is likewise dropped into the ear to remedy atonic deafness, or to soften the indurated cerumen.

There are two sorts of eels, the large and small; of both these, those that are tender, fat, well fed, and taken from a fine clear river, are to be preferred. — See *Conger*, and *Lamprey.*

EEL-POWT.—This is a fish that usually lives in rivers, and sometimes in lakes. It feeds on weeds, insects, and fishes, and even on its own species. It cannot bear the cold, and therefore is not so fat or pleasing to the taste in winter as in summer. Those caught in clear running waters are the best. The roe is not eaten, and is said to cause pains in the stomach, and to work violently both upwards and downwards, some remarkable examples of which are given by Gesner, lib. 6, *de Animalibus.*

The meat of the eel-powt is white and well tasted; it varies in size from two or three pounds to seven or eight, and in summer time agrees with all ages and constitutions.

EGGS.—It is probable that the eggs of all birds might be employed as food; but custom and convenience have given the preference to those of the common hen, the guinea hen, and the duck.

The fluid contents of an egg consist of the white and the yolk. The former very much resembles the lymph of the blood, or the coagulable part of milk; the latter is an animal mucilage, composed of oil, coagulable lymph, and water, so as to form an emulsion. The oil is separable from the yolk when boiled till it becomes hard, by means of pressure. The eggs of all granivorous birds, and especially of the domestic fowl, yield a mild, demulcent and strengthening aliment, well suited to consumptive persons, and such as are exhausted by immediate evacuations. Both the white and yolk of an egg are very indigestible when boiled to hardness. Eggs should be subjected as little as possible to the art of cookery. The lightest as well as the simplest means of preparing them for the table is to boil them only as long as is necessary to coagulate slightly the greater part of the white, without depriving the yolk of its fluidity. This is what is called poaching them, and in this way they sit well on the stomach, If they be put into briskly boiling water, one minute by a stop-watch will be sufficient to do them in this manner.

EGGS, Medicinal Properties of.—Raw eggs are gently laxative, and are found to be serviceable in jaundice and obstructions of the liver. A nutritive restorative drink is prepared by rubbing the yolks of two or three eggs, and a little white sugar, with a pint or two of cold water, adding to it afterwards a glass of Rhenish or other light wine, and a little lemon juice to give it a flavour. This egg emulsion, without the wine, is a good remedy for coughs, hoarseness, spitting of blood, costiveness, &c. Eggs, in whatever state, have the peculiar quality of singularly affecting some stomachs, even in the smallest quantity; while on others they do not produce the least uneasy sensation.

EGGS, To Choose.—To judge properly of an egg, put the greater end to your tongue, and if it feel warm it is fresh; but if cold, it may be pronounced stale; and according to the degree of heat or cold there is in the egg, you will thus be enabled to judge of their state of staleness or freshness. Another method is, to hold it up against the sun, or a candle, and if the yolk appear round, and the white clear or fair, it is a sign of goodness; but if the yolk be broken, and the white thick or cloudy, the egg is a bad one. Some people, in order to try the quality of an egg, put it into a pan of cold water; when the fresher it is, the sooner it will sink to the bottom; but if it be addled, or rotten, it will swim on the surface.

EGGS, To Preserve.—The best method of preserving eggs is to keep them in meal or bran; though some place them in wood-ashes, with their small end downwards. When necessity obliges you to keep them for any length of time, the best way is to grease them over with a little hog's lard, and afterwards to bury them in salt, a method which will preserve them in any climate; but the sooner an egg is used, the more wholesome it will be found.

Eggs are an indispensable article in cookery. They are used for a prodigious number of entrées, entremets, and sauces. They are the basis of all pastry, as well as creams. The cook should be very particular in the use of them; a single bad one will spoil a very large dish. They should, therefore, to avoid this, be broken and smelt one after the other; and when the yolk is removed from the white, a small basin should be at hand, to break them in separately. Hard-boiled and fried eggs, pancakes, and all artificial preparations of eggs, lie heavy on the stomach. The eggs of ducks and geese ought to be eaten only by persons of the most active and powerful stomachs. All eggs require a sufficient quantity of salt, to promote their solution in the stomach; yet butter renders them still more difficult of digestion; hence it is equally pernicious to use much butter with a view to soften them when they are boiled to a degree of hardness. Hippocrates says (lib. iii.) that the whites of eggs, well beaten in spring water, make a very moistening, cooling drink, for people in fevers, and for opening the body. Galen says, the best and wholesomest eggs are those of the hen and pheasant; but he prohibits those of the goose and ostrich, which are highly extolled by other writers.

EGG-SHELLS.—Antacid. Sometimes used, and even the whole egg, to counteract the acidity of beer, upon which they act the same as the carbonates of lime. The shells are, in fact, almost wholly the same substance. The following recipe, first published in the 27th No. of the Philosophical Transactions, shews that the use of eggs for the prevention of acidity is of no modern date. The writer (Dr. Stubbs) says, that he learned it from an ale-seller at Deal, and that he tried it successfully during a voyage to Jamaica. "To every runlet of five gallons, after it is placed in the ship not to be stirred any more, put in two new-laid eggs whole, and let them lie in it; in a fortnight, or a little more, the whole egg-shells will be dissolved, and the eggs become like wind-eggs, inclosed only in a thin skin; after this the white is preyed on, but the yolks are not touched or corrupted; by which means the ale was so well preserved, that it was found better at Jamaica than at Deal." It may be observed that, although this was new to Dr. Stubbs, he was not the original discoverer. It was probably known in the trade for centuries.

Like crabs' claws and all other cretaceous substances, egg-shells are of an alkaline nature, more so when the crude part of them is taken away. To cure these, and make them fit to be put into a cask of drink, they should be baked a little; after which they may be either mixed with other ingredients, or used alone for the purpose of preserving beer or ale against staleness.

EGGS, Whites of.—Whites of eggs will certainly clear, feed, and preserve drink, if mixed with wheat-flour; but then it should be remembered, that in time they corrupt and injure the drink, and do injury where the drink is not very strong and able to preserve itself sound; and if they be used too copiously, they may bring the beer into a ropy condition, or give it too raw a taste. In consequence, therefore, of this too great a liability from the use of whites of eggs, some, when they use them, boil them up in water and sugar to a fine syrup; and in this way they preserve and clear the drink, when mixed with other ingredients.

ELDER FLOWERS.—The ointment made from elder flowers is cooling and emollient. Infused in vinegar, they are both grateful to the stomach and taste; but the leaves, having rather a rank smell, are not recommended in salads. The flowers and fruit of the common black elder are emollient and pectoral. The internal bark is a drastic hydrogogue purge, and is recommended both by Boerhaave and Sydenham. The infusion of the flowers is an excellent drink in catarrhal affections and measles. Elder wine is made from the berries, in various degrees of strength and richness, according to the caprice or circumstances of the maker, and the quantity of spirit added.

ENDIVE.—A species of succory. The largest, tenderest, and whitest leaves of endive are best boiled, being less crude, in that state, to the stomach. The curled leaves are more delicate, being eaten alone, or in composition with other salads. The larger leaves are preferred by many to lettuce.

ENGLISH WINES.—It is asserted by Mr. Miller (see *Rees's Cyclopædia*, art. *Wine*) that he has made wine from English grapes, as good as any of the best and purest French wines drank either in Paris or Champagne. It is supposed that formerly there were considerable vineyards in England, particularly in Gloucestershire (see *Aikin's England Delineated*) And about a century after the accession of William the Norman, there was a vineyard near Pembroke, in Wales. It has been thought probable that the cultivation of the vine was relinquished in consequence of an increased intercourse with France. Notwithstanding the climate, Great Britain has of late years been unfavourable to the production of wines, yet our good housewives continue to make a pleasant vinous beverage from no less than thirty-seven sorts of fruits.—See *Domestic Wines*.

Now will the Corinth, now the rasps supply,
Delicious draughts: the quinces now, or plums,
Or cherries, or the fair Thisbean fruit,
Are pressed to Wines.
Besides the orchat, every hedge and bush
Affords assistance; e'en afflictive birch,
Curs'd by the unlett'red, idle youth, distils
A limpid current from her wounded bark,
Profuse of nursing sap. When solar beams
Parch thirsty human veins, the damask'd meads,
Unforced, display ten thousand painted flowers
Useful in Potables. Thy little sons
Permit to range the pastures; gladly they
Will mow the cowslip posies, faintly sweet,
From whence thou artificial wines shalt drain,
Of icy taste, that, in mid fervours, best
Slake craving thirst, and mitigate the day. PHILIPS.

ENTRÉES.—Dishes served at the commencement, or during the first course of the dinner.

ENTREMETS.—Small ornamental dishes, served in the second and third courses.

EXTRACT, BLACK.—See *Black Extract*.

F.

FERMENTATION.—Chemically speaking, fermentation is a spontaneous commotion in a vegetable substance, by which its properties are totally changed. Several circumstances are essential to the process of fermentation:—

1.—A certain degree of fluidity for instance—dry subtances do not ferment at all. 2.—A certain degree of heat. 3.—The contact of air.

There are four distinct kinds of fermentation.

1. The Saccharine.
2. Vinous.
3. Acetous.
4. Putrefactive.

The conditions necessary for the spirituous fermentation are:—

1. A saccharine mucilage.
2. A degree of fluidity slightly viscid.

3. A degree of heat between 35 and 65 of Fahrenheit.
4. A large mass in which a rapid commotion may be excited.

When these four conditions are combined, the spirituous fermentation takes place, and is known by the following characteristic phenomena:—

a. An intestine commotion takes place.
b. The bulk of the mixture thus becomes augmented.
c. The transparency of the fluids is diminished by opaque filaments.
d. Heat is generated.
e. The solid parts mixed with the liquor, rise, and float, in consequence of the derangement of elastic fluid.
f. A large quantity of carbonic acid gas is disengaged in bubbles.

All these phenomena gradually cease in proportion as the liquor loses its sweat and mild taste, and it becomes brisk, penetrating, and capable of intoxication. In this manner, wine, beer, cyder, &c., are made. All bodies which have undergone the spirituous fermentation, are capable of passing into the acid fermentation; but, although it is probable that the acid fermentation never takes place before the body has gone through the spirituous or saccharine, yet, the duration of the first is frequently so short and imperceptible, that it cannot be ascertained. Besides the bodies which are proper for spirituous fermentation, this class includes all kinds of fæcula boiled in water.

The only substance known to be subject to the fermentative process is starch, *e. g.*—When gelatinous starch, or amidine, is kept in a moist state for a considerable length of time, a change gradually ensues, and a quantity of sugar equal to about half the weight of the starch, is generated. The germination of seeds, as exemplified in the malting of barley, is likewise an instance of the saccharine fermentation: and the ripening of fruits has also been regarded as an example of it; especially since some fruits, such as the pear and apple, if gathered before their maturity, become sweeter by keeping. The opinion, however, of Proust, is, that the process of ripening appears to consist in the conversion, not of starch, but of acid, into sugar.

The conditions requisite for establishing the VINOUS FERMENTATION, are four in number—namely,

1. The presence of sugar.
2. Water.
3. Yeast.
4. A certain temperature.

The best mode of studying this process, so as to observe the phenomena, and determine the nature of the change, is to place five parts of sugar, with about twenty of water, in a glass flask, furnished with a bent tube, the extremity of which opens under an inverted jar full of water and mercury; and after adding a little yeast, to expose the mixture to a temperature of about 60° or 70° F. in a short time bubbles of gas begin to collect in the vicinity of the yeast, and the liquid is put into a brisk motion, in consequence of the formation and distension of a large quantity of gaseous matter; the solution becomes turbid, its temperature rises, and froth collects upon its surface. After continuing for a few days, the evolution of gas begins to abate, and at length ceases altogether; the impurities gradually subside, and leave the liquor clear and transparent. The only appreciable changes found to have taken place during the above process, are the disappearance of the sugar and the formation of alcohol, which remains in the flask, and of carbonic acid gas, which is collected in the pneumatic apparatus.

The conditions requisite for the the acetous fermentation are:—

a. A heat, from 70° to 85°, F.

b. A certain degree of liquidity.

c. The presence of atmospheric air.

d. A moderate quantity of fermenable matter.

The acetous fermentation consists in the conversion of alcohol, &c. into acetic acid; *e. g.*—When any fluid has undergone the vinous fermentation, or even pure alcohol diluted with water, is mixed with yeast, and exposed in a warm place to the open air, an intestine movement speedily commences, heat is disengaged, the fluid becomes turbid from the deposition of a peculiar filamentous matter, oxygen is absorbed from the atmosphere, and carbonic acid is disengaged. After a certain time, these changes cease spontaneously; the liquor becomes clear, and, instead of alcohol, it is now found to contain acetic acid, or vinegar. Not a vestige of spirit remains, it being entirely decomposed; but the greater the quantity of spirit in the liquor, previous to the fermentation, the greater will be the quantity of true vinegar obtained.

Putrefactive fermentation is that process by which a substance is decomposed and dissipated in the form of putrid gas. Every living body, when deprived of life, performs a retrograde process, and becomes decomposed. In vegetables, this is called fermentation, and in animals, putrefaction. The same causes, the same agents, and the same circumstances, determine and favour the decomposition in animal and vegetable substances, and the difference of the products which are obtained, arise from the difference of the constituent parts of each. The requisites for this process are,

1. A certain degree of humidity.
2. The access of atmospheric air.
3. A certain degree of heat.

The air cannot be regarded as absolutely necessary to this process, since putrefaction is found to be produced by the concurrence of the two other conditions only; though doubtless the process is materially promoted by free exposure to the influence of the atmosphere.

All proximate principles are not equally liable to this kind of dissolution: substances in which charcoal and hydrogen prevail, such as the oils, resins, and alcohol, do not undergo the putrefactive fermentation; nor do acids, which contain a considerable excess of oxygen, manifest any tendency to submit to this change. Those substances are most disposed to putrefy, the oxygen and hydrogen of which are in proportion to form water, and such in particular as contain nitrogen; among which, however, a singular difference prevails: *e. g.*—Caffein evinces no tendency to spontaneous decomposition, while gluten, which certainly must contain a less proportional quantity, putrefies with great facility. These substances, the texture of which being most loose and soft, being, *cæteris paribus*, the most liable to spontaneous decomposition.

FERMENTATION, General Method of Preventing.—This general method of preventing fermentation of animal and vegetable substances, consists in the total exclusion of atmospheric air, or rather of oxygen. The truth of this, however, is not so obvious to common observation, as that of the preceding; for, on the contrary, we every day see substances, preserved by being apparently excluded from the air, but, in reality, by being shut up in confined air; and we are taught to consider free ventilation as a powerful means of preservation. The manner in which the latter acts, we have shown to be by removing moisture, especially when contaminated by the exhalation of the perishable substance.

The *rationale* of the former is more obscure, but has been ingeniously attempted by Gay Lussac, and others, in order to explain the processes of M. Appert

Gay Lussac found that neither fresh vegetable juices, nor animal matter fermented so long as oxygen gas was perfectly excluded; and that the fermentation in both cases commenced as soon as any portion of oxygen was admitted. When oxygen gas is confined in contact with a fermentable substance, it is changed into an equal bulk of carbonic acid gas, and all further action ceases. Methods of preserving fermentable substances, illustrative of this principle, have long been imperfectly practised by house-wives.

FIBRINE.—Fibrine, like albumen is another of those animal substances, which is neither acid nor oleaginous. It enters largely into the composition of the blood, and is the basis of the muscles; it may consequently be regarded as one of the most abundant of the animal principles. It may easily be procured by stirring recently drawn blood with a stick during its coagulation, and then washing the adhering fibres with water until they are perfectly white. It may also be obtained by removing the soluble parts from lean beef, cut into small slices, by digestion or maceration in several successive portions of water.

Fibrine is solid, white, and without smell. It is somewhat elastic when moist, but, on drying, it becomes hard, brittle, and semi-transparent. In a moist warm situation it readily putrefies. It is insoluble in water at common temperatures, and is dissolved in a very minute quantity by the connected action of boiling water. Alcohol, of density 0.81, converts it into a fatty adipocirous substance, which is soluble in alcohol and ether, but is precipitated with water.

The action of acids on fibrine, has been particularly described by Berzelius. — See *Med. Chirurg. Trans. Vol.* iii. *p.* 201. *et seq.*

FIGS.—A luscious fruit, the produce of the fig-tree. They are nourishing, grateful to the stomach, and easier of digestion than any of the other fruits; and accordingly are used in medicine, as ingredients in pectoral decoctions, and in lenitive electuaries. They are also applied externally, to soften, digest and promote maturation. They abound with saccharine matter, are uncommonly nutritive, though at the same time of a flatulent nature, unless eaten with bread or other mealy substances. Of similar effects are mulberries and raspberries: the former having a more mucilaginous and nourishing juice, while that of the latter is of a vinous nature, and one of the best cordials for allaying thirst and affording refreshment. In our climate the fig comes into season about August. The best figs are the produce of Turkey, Italy, Spain, and the southern parts of France. The islands of the Archipelago yield figs in great abundance, but of an inferior quality. The ancients made use of the juice or sap of a fig for rennet, to cause their milk to coagulate:—

> The figs' prest juice, infus'd in cream,
> To curds coagulate the liquid stream.
>
> POPE'S HOMER.

FILBERTS.—A well known nut, varying in size, growing upon a common shrub, in hedges and woods, and sometimes in gardens.

Filberts, as well as nuts, contain a great quantity of oil, which is easily abstracted from them. The former have a more agreeable taste. They are said to be pectoral and nourishing, because of their oily parts; and of a binding nature, in consequence of the earthy principle they contain. They are flatulent, and difficult of digestion when used too freely. The husks and covers of the filberts are subacid and astringent, and provoke urine. We are directed to choose such as are large, full grown, each having a kernel, nearly round, reddish, full of juice, of an excellent taste, and not worm-eaten.

FINANCIERE.—An expensive, highly flavoured, mixed ragout.

FISH. — In some parts of the world, fish constitutes the sole or principal article of food of the people, (hence denominated Ichthyophagi), and it is almost every where in request. In Siberia, dried fish is used instead of bread. The Laplanders make a bread of fish bones; and the Negroes of the West Coast of Africa dry a species of fat, and beat it in wooden mortars to a paste, which keeps all the year, and is eaten with rice or corn. With some tribes, putrid fish is the favourite and ordinary food. Fish, however, is not so universally a safe aliment as flesh and fowl, for although no species is generally unwholesome, yet, in some situations, individuals of many different species by any other certain external characters, at the same place, and in the same season, are innocent and nutritious—circumstances which render the eating of fish in such countries, not exempt from danger.

The ancients entertained a number of prejudices relative to the wholesomeness and unwholesomeness of certain fishes. The priests in Egypt were prohibited from eating fish of any knd, under the impression that it increased the sensual appetites, or that it caused the leprosy. For the latter reason, the people were forbidden to use any fish not covered with scales. Moses, the great legislator of the Jews, adopted the same principle.—"Whatever hath fin or scales in the water, in the seas, and in the water, them shall ye eat."—"Whatever hath no fins and scales in the waters, that shall be an abomination nnto you."—Levit. chap. xiv. v. 9, 12.

Numa Pompilius made a law for the Romans to the same effect; but it did not continue in force, as we find the lampreys and sturgeons ranked among the luxuries of their emperors, and similar fish constituted the principal support among the people in some districts, and that too without being attended with any bad effect.

With regard to fishes, there is an infinite variety, as respects their fitness as articles of food, in the colour and texture of their muscles, and in being more or less gelatinous, fibrous, or oily. The musles of many fish, with the exception of the heart, are quite white; and, in general, when the fish is good, they become opaque when cooked. *When they remain semi-transparent and blush after boiling,* they are not in season.

At certain seasons of the year, the flesh of some fishes is of a pale red, and the lighter the colour of these kinds the more they are esteemed. The muscles of most fishes are disposed in flakes and layers; and when in perfection, there is, when cooked, a *layer of white curdy matter* between them resembling coagulated albumen. Some other fishes, principally those of the flat kind, or eel-shaped, or without scales, have a fibrous flesh not divisible into flakes.

The liver of the fish tribe abounds with oil, and of many species the flesh is covered with oil or fat, as the eel, salmon, &c.; but in a variety of others the flesh seems to be totally free from it, as in all the varieties of the cod, haddock, whiting, and the flat fish.

There are few, if any parts of a fish that are not nutritious. The great bulk of them consists of the muscles of voluntary motion, covering the spine and its appendages. But of some fishes, as turbot, ling, &c. the pulpy, gelatinous skin is esteemed. Codsounds are the swimming bladders of the large cod, and they are separately preserved and sent to the metropolis for the gratification of gourmands.

In the fresh fish, the tongue, palate, and lips, although too soft for most people, are still preferred by many.

The roe of most fishes is eaten, and that of some constitutes a principal article of natural food.

Caviare is the preserved roe of the sturgeon. The melt or soft roe of the herring is eaten by many. The liver of the turbot is very large, and is much esteemed. The enormous *vas deferens* * of the male cod fried, is one of the best garnishes for that fish; and some of the smaller and more delicate fishes are all eaten with the exception of the head.—See *Cod.*

As far as our knowledge extends of the effect of sex upon fish, the male or melter is preferred, as in the herring and salmon. In spring the male only of the lump fish or cock-paddle is eaten. Later in the year the female is nearly of equal quality.

I. *Fishes, as regards their classification, may be divided into three families,* relatively to the situations in which they live; namely,

1. Those which live entirely in salt water, as the cod and herring.

2. Those which live entirely in fresh water, as various species of the cyprinus.

3. Those which live alternately in fresh and salt water, as the salmon and sturgeon.

The comparative esculent qualities of each depend upon a great variety of circumstances; but of the last class it may be remarked, that as they enter the rivers for the purpose of spawning, they are in the greatest perfection when proceeding up the rivers, and are quite out of season when returning to the sea.

II. *As connected with the time of spawning,* the season of the year has the most decided influence upon the quality of fish, which in general, of every kind, are in better perfection some time previous to their beginning to spawn, and are unfit for food for some time after this process of nature has taken place. This circumstance, however, is not sufficient to prevent those who have an easy opportunity from catching and eating fish in this state; and the Legislature has found it necessary to fix the periods at which salmon fishing is lawful.

When the salmon is in the sea, and about to enter the river for the purpose of spawning, it is infested with a parasitical insect, which adheres to every part of the body, but dies and drops off after the fish has been a short time in fresh water. In this state it is in the highest state of perfection; the flesh is firm, red, and delicious, their form elegant, and their colours beautiful. On first entering the river the silvery colour of the sides of salmon is very slightly marked with spots; but when it has remained long in fresh water, this colour decays, and the spots become much larger, darker coloured, and more obvious. At the time of spawning, the sides of the fish become of a very red colour; and when the spawning season is over, the white colour entirely disappears, the belly becomes livid, and the sides are streaked all over with a sooty or black colour; and in this state the salmon are termed, in the Acts of Parliament, red and black fish. At this time the rays of their fins are jagged or torn, a great part of their scales rubbed off, and their gills infested with parasitical worms.

In Ireland, where there is great freedom used in killing salmon during and after spawning season, the eating of the fish at this time has been often, and in many places, found to be productive of much disease and mortality; and the same is probably

* A duct which rises from the Epididymis, which is a convolution of it, and passes through the inguinal ring, in the spermatic cord, into the cavity of the pelvis, in the human subject, and terminates in the vesiculæ seminalis. It conveys the semen, after it is secreted, into the seminal vessels.—*New Lond. Med. and Surg. Dict.*

the case in Scotland, although not so much observed as to be generally known; still a very marked instance is related by Dr. Walker. Other fish are probably unwholesome after the spawning, but they are seldom caught in that state. Young fish, not come to the age of spawning, are in season all the year round.

III. *With regard to the age of fish, as affecting their fitness for food*, we hold with the old adage, " better small fish than no fish;" but, "the larger they are the better" is not correct. For although a well grown and well nourished individual is always finer than one not in such condition, and although some fishes, naturally soft, may become firmer as they grow older, yet many fishes are certainly more delicate when of a smaller size, probably from being young.

Cod is generally preferred large; but large cod is sometimes very coarse. The haddock is certainly better when it does not exceed the middling size; and the whole skate tribe are apt to get coarse and strong as they get large.

Ausonius tells us that the bream is the only fish that improves by age.

IV. *The flavour of fish*, independently of their apparent condition, is very much influenced by the nature of their food; and, on this account, there is the greatest difference of the fish on different coasts, or in different rivers and lakes. Sea fish, in general, are best where the water is deep, and strong and salt, and where the shore is bold and rocky. Hence the cod and ling, caught near the shores and in bays, are greatly inferior in quality to fish caught off headlands, in strong currents, and deep waters.

Of the river fish, those which are found in clear rapid streams, with a rocky or gravelly bottom, in a mountainous country, are indeed less fat, but better tasted; and hence the salmon of the Elbe and Rhine are more valued than that of the other Continental rivers. The Thames salmon, however, is preferred in the London market to all other; and some gourmands pretend to distinguish by the taste when it comes from a favourite *reach* of the river. It is, however, certain that fish caught in slow running waters, with a muddy bottom, such as occur in flat countries with a rich soil, though generally larger and fatter, are very inferior in the more essential parts of flavour and firmness. The fish also of deep lakes, with a gravelly bottom, is much preferable to that of small, shallow, and muddy ponds or tanks. The bad qualities of fish in stagnant waters, into which the filth of cities was emptied, did not escape the notice of Galen.

Fresh-water fish, bred in muddy bottoms or foul water, are sometimes freed from their unpleasant earthy taste, by keeping them for some time in ponds of clear water with a gravelly bottom.

V. *A process called crimping* is sometimes adopted, for the purpose of improving fish, which has been investigated by Sir Anthony Carlisle, to whom the fish eating world are indebted for the following information:—" Whenever the rigid contractions of death have not taken place, this process may be practised with success. The sea fish destined for crimping are usually struck on the head when caught, which, it is said, protracts the term of this capability, and the muscles which retain this property longest are about the head. Many transverse sections of the muscles being made, and the fish immersed in cold water, the contractions called crimping take place in about five minutes; but, if the fish be large, it often requires thirty minutes to complete the process."

The crimping of fresh water fish is said to require hard water; and the London fishmongers usually employ it. Sir Anthony Carlisle found that, by being crimped, the muscles subjected to the process have both their absolute and specific gravity increased; when it appears that the water is absorbed, and condensation takes place. It was also observed that the effect was greater in proportion to the vivaciousness of the fish.—From these observations it would appear, that the object of crimping is to retard the natural stiffening of the muscles, and then, by the sudden application of cold water, to excite it in the greatest possible degree, by which means it both acquires the natural firmness and keeps longer. It may also here be observed, that rigidity is a certain mark that the fish is perfectly fresh, and has not begun to spoil. See *Croonian Lectures on Muscular Motion, by Anthony Carlisle, Esq. F R.S.*, *Philosoph. Trans.* for 1805, 4to, Lond. p. 23.

VI. The operation of castrating and spaying of fish was at one time practised, but only to a very limited extent, and is now entirely laid aside. It was first performed by Mr. Tull, of Edmonton, who appears to have been a fishmonger. His object at first was to prevent the excessive increase of fish in his ponds, where the numbers did not permit any of them to grow to an advantageous size. From castration, however, the increase was not only prevented, but those which had undergone the operation considerably exceeded their usual size, were more fat, which was no trifling consideration, and were always in season. The operation was performed by making a longitudinal incision from between the two fore fins almost to the anus of the fish, laying aside the intestines, first on one side and then on the other, and transversely dividing the oviduct or *vas deferens*. The wound in the integuments, was then stitched up, and without further attention, few fish died of the operation.—*Mr. Neil, Philosoph. Transactions,* vol. 1, p. 584.

This operation was most easily performed in May, when the ovaries and spermatic ducts are full. Baron de la Lorin, in France, operated so successfully, that out of two hundred carp he did not lose four. It was also tried in Germany; where it was likewise observed that those fish, castrated in spring, were in autumn still smaller than the others; that in the following spring they were large and fat, but some people thought not so well tasted.—See *an account of Mr. Samuel Tull's method of castrating fish, in Philosoph. Trans.*, vol. xlviii, 4to. Lond. 1755, p. 76.

Dietetical objections against fish are numerous. It is said the nourishment derived from them is incomplete; not so stimulating, nor so congenial to the nature of man, as either birds or quadrupeds; some classes of them also, as shell-fish, salmon, &c. are more indigestible than meat; aud fish in general has a stronger tendency to putrefaction than meat. But the faults of fish are somewhat corrected by the manner in which they are commonly eaten. In a fresh state, sauces and pickles of an acid nature are employed with them, and when dried, the action of the stomach is promoted by salt and spices. Fish compared with butchers' meat, is less nourishing, and the more tough sorts harder of digestion. Hence many are under the necessity, after salmon, &c. to have recourse to a dram of some spirit or other to assist digestion.—See *Fish, to Cook*.

It has been usual to attribute the cutaneous eruptions which follow the use of fish, to the sympathy existing between the skin and stomach; the effect, however, is merely temporary, as it departs after the digestion of the meal is finished. The operation of an emetic will tend to expedite the disappearance of the affection by removing at once the noxious aliment. It should be stated here, nevertheless, that the only principle, upon which depends the odour of certain fish, is absorbed from the alimentary canal, and carried into the blood, as is evident from the peculiar flavour of the flesh of certain birds who live upon fish. From the abundance of pilchards in Cornwall, and the ready access which the hogs have to them, the pork of that county generally possesses a fishy savour; and people who live long on fish, are known to secrete a perspiration of a rancid smell: hence the probability that certain diseases of the skin may either be produced or aggravated by such diet; and in warm climates, such effects may be less equivocal. It may therefore be presumed, that the eating of fish was prohibited upon rational principles by the Egyptian priests, in order to avert the leprosy; and Moses, no doubt, was influenced by some such belief, when he drew up his celebrated injunction against the use of unclean meats. — See *Levit.* xi. 9, 12.

Of the poisonous nature of various species of fish.—Numerous cases are on record, and particularly as having occurred in the West Indies. The poisonous matter of fish is not peculiar to any genus, species, or distinct variety; but occurs in individuals only, and those of several genera of very different classes. With the exception of the Bogmarus Icelandicus, which by the Icelanders is reputed poisonous, because the crows refuse to eat it; poisonous fish are only found in tropical seas, and there only at certain seasons, or in the Caribbean Sea, in May, June, and July, after having spawned. Of these Dr. Burrows* has given us a catalogue which, for general purposes, it may be useful here to quote:

The Old Wife.
Smooth Bottle Fish.
Tunney.
Blower or Blazer.
Conger Eel.
Dolphin.
Porgee.
Grey Snapper.
Hyne.
Puca, Major of.
Rock Fish.
Grooper.
King Fish.
Bonnetta.
Horse-eye (Cavalloe).
Spanish Mackarel.
Blue Parrot Fish.
Yellow-billed Sprat.
Sea Lobster.
Land Crab.
Muscle.

Of all these, the yellow billed sprat is the most active and dangerous; and the usual course of symptoms from eating it is the following: Itching over the whole body—violent colic pains — a contraction and pungent heat of the gullet—nausea—heat of the skin, and great acceleration of the pulse—giddiness—loss of sight—cold sweats—insensibility and death. Sometimes the disease is uncommonly rapid; convulsions ensue immediately on swallowing the fish, and death is a speedy consequence.†

The *grey snapper* produces Cholera Morbus and excruciating pain, with efflorescence, and is apt to leave a weakness of the lower extremities, dimness of sight, and dulness of hearing.

These are also the ordinary results, with, however, some variety, that are experienced from the use of the various kinds enumerated in the preceding catalogue. The contraction and heat of the gullet do not always occur; but instead of it there is an excessive heat of the mouth and tongue. A miliary eruption, (vesicles resembling millet seeds) or an efflorence over the whole body, is very common.

The cause of this poison has been the subject of much ingenious research, some inclined to the idea that it was owing to the fish feeding

* Lond. Med. Repos. Vol. iii. p. 445.

† Dr. Chisholm, p. 395.

on copper banks. This, however, was abandoned, as, on chemical examination, a portion of the argillaceous stone of Antiqua was found not to contain any; but a precipitate was obtained, possessing the qualities of sulphate of Barytes. Dr. Burrows, who has investigated this question with considerable ability, is of opinion that the poison does not exist in the skin, or in the stomach and intestinal canal, or in the liver and gall-bladder exclusively, although there is no doubt that persons have been poisoned from eating these various parts. It pervades the whole substance of the fish; and this is abundantly proved by the statements of Dr. Chisholm, and the numerous authorities adduced by him. As to its origin, he discusses the cupreous theory of Dr. Chisholm, and shews the great improbability of the metal being held in solution in the sea-water. The fact, also, that land-crabs occasionally produce similar symptoms is further urged against this opinion. The idea that other substances, taken as food, may be the cause of their poisonous nature, is shewn to be unfounded. He concludes with advancing and establishing the belief, that a morbid change takes place in the system of the fish: and this is particularly to be expected in those taken from the tropical seas, when they are immediately exposed to a high temperature, putrefaction must soon ensue.

The Company of Fishmongers, as well as other persons concerned in supplying the city of London with fish, were anciently under the immediate direction of the court of lord mayor and aldermen, to whom this power was confirmed by an act of parliament, in the 7th of Richard II., in the year 1384; at which time the dealers in fish consisted of two communities, as above stated, namely, the stock-fishmongers and the salt-fishmongers; and both of them had no less than six halls; two in Thames-street, two in New Fish-street, and two in Old Fish-street; and were moreover in such high reputation for valuable members, that six lord mayors were chosen out of them in twenty-four years.

Among the ancient statutes of the fishmongers of London, as they are taken from a book in the chamber of London, are the following:—

Dicunt homines de Halimato, &c. The men of the halimote* say, that they ought to have two *Laghelmotes*† in the year, one on the feast of St. Martin, and the other in Lent; and all fishermen and those of the halimote ought to be there, and he that fails, forfeits 2*d*.

Moreover, it ought to be forbidden in that halimote, that no fishmonger buy a fresh fish before mass at the chapel upon the bridge be celebrated, or at the church of St. Magnus.

They say, also, that the said fishermen must sell fresh fish after mass, and salt fish after prime.

That no fishmonger ought to go to buy fish beyond the bounds appointed: and these are the bounds—the chapel upon the bridge, Baynard's Castle, and Jordan's Key, unless the fish be set to sell, as they are at *Berkynes*, *Northflete*, *Dartford*, and in some other markets.

None to buy fish in any boat, unless brought thence to land.

*** On a complaint once made of this company, against one of their trade for forestalling fish, letters were issued by the king to the mayor and sheriffs of London to remedy the aggression.

The fishmongers, in their hall, have a handsome coat of arms of England, erected there to the honour of King William III., with the following inscription:—

" Augustissimo, potentissimo, et

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* A court baron; the meetings of a tenant, or a hall of a manor.

† From *laga*, Sax., the law; two lawful halimates, or courts, &c.

invictissimo, Scotiæ, Galliæ, et Hiberniæ, Regi GULIELMO Tertio, fidei a papismo defensori et conservatori, libertatis restauratori publicæ felicitatis auctori, seculi reparatori, SACRUM."

In the court of assistants' parlour of the Fishmongers' Company, at their hall, in Thames-street, are eight capital paintings of fish, of which the following are descriptions. They were cleaned in 1781, by Mr. Spiridiona Roma, and are the only capital paintings belonging to the company. They point out the season at which the fish are in the best condition, &c.

NUMBER I.

1. A codlin, January, November, December.
2. A Scotch lobster, October.
3. A barbel, September.
4. A jack pike, in most months.
5. A maid, all the year.
6. A grey mullet, October.
7. A sole, all the year.
8. A red gurnet, September and October.
9. The gold and silver eel, all the year.
10. The large river flounder, March, August, December and January.
11. A tench, November and December.
12. A small roach, January and September.
13. A small dace, January and September.
14. A green smelt, September.
15. A gudgeon, most months.
16. A lamprey, September.
17. A dab, October, November, December and January.
18. A small river flounder, most months.
19. A horse mackarel, September.
20. A common mackarel, September.
21. A Feversham oyster, from October to January.

NUMBER II.

1. A turbot, March, and most months,
2. A haddock, October, November, and December.
3. Sea crab, March, April, and May.
4. A green river carp, January.
5. A sea cray fish, November, April, and May.
6. A whiting, October, November, and December,
7. A perch, October.
8. A herring, May, June, and September.
9. A Scotch haddock, November.
10. A shrimp, all the year.
11. A cockle, December, January, and February.
12. A Colchester oyster, from October to February.

NUMBER III.

1. A cod, November, December, January, and February.
2. A ling, November and December.
3. A river pike, most months.
4. A sea flounder, December, January, February, and March.
5. A weaver, December.
6. A pouting, November and December.
7. A char, December, January, February, and March.
8. A scolop, in mackarel season.
9. A green Welfleet oyster, November, December, and Jan.
10. A muscle, December.
11. A sprat, November, December, and January.

NUMBER IV.

1. A hallibut, January, February, and March.
2. A golden pond carp, most months.
3. A grailing, or humber, January.
4. A golden smelt, January.
5. A chub, February.
6. A loach, most months.
7. Large dace, February.
8. Large roach, February.
9. A cole fish, January.
10. A grey lump, January.
11. A Melton oyster, November, December, and January.
12. A white Welfleet, November, December, and January.

NUMBER V.

1. A salmon, from Nov. to July.

2. A lamper eel, April.
3. A plaice, most months.
4. A bass, March.
5. The allis, March.
6. A red lump, December and Jan.
7. A guard fish, May.
8. A pilchard, April and October.
9. A bream, February.
10. A silver smelt, March.
11. A sea tench, March.
12. A willis, March.

NUMBER VI.

1. A river trout, from February to August.
2. A thorn-back, all the year.
3. A black lobster, June.
4. A smeer-dab, August.
5. A silver eel, most months.
6. A kingston, March.
7. A homeling, September.
8. A river coney-fish, December.
9. A sea perch, February.
10. A bleak, most months.
11. A grig, most months,

NUMBER VII.

1. A sturgeon, most months.
2. A salmon trout, from February to August.
3. A beautiful large mackarel, May and June.
4. A fire flaw, April.
5. A pope, most months.
6. A red prawn, most months.
7. A white prawn, May.
8. A brown shrimp, or bunting, May and December.
9. A river crab, May.
10. A shadd, May.
11. A periwinkle, May and June.

NUMBER VIII.

1. A Joanne Doree, August.
2. A skate, most months.
3. A river cray-fish, most months.
4. A red mullet, May, June, and July.
5. A brill, September.
6. A sea eel, or conger, most months.
7. A ruff, August.
8. A grey gurnet, gurnard, or gurney, September.
9. Post, or miller's thumb, November.
10. A right anchovie, the beginning of July.

FISH, To CHOOSE.—The general rules for discovering whether fish be fresh or stale, are, by observing the colour of the gills, which should be of a lively red—whether they be hard or easy to open—the standing out or sinking in of their eyes—their fins being stiff or limber—or by smelling to their gills.

Fish taken in running water are always better than those taken from ponds.—See

1. Cod	8. Sturgeon
2. Herrings	9. Soles
3. Flounders	10. Tench
4. Lobsters	11. Trout
5. Perch	12. Turbot
6. Salmon	13. Smelts
7. Skate	14. Oysters

Salt water fish are perhaps the best of any, as their flesh is more solid, agreeable, and healthy, less exposed to putrescency, and less viscid. They possess these excellent qualities when fresh; when salted, they have all the properties, consequently all the disadvantages of salt fish. With respect to herrings, they are, confessedly, the most easy of digestion of all sea fish; and salt herrings, in particular, if eaten in small quantities, dissolve the slime in the stomach, stimulate the appetite, create thirst, and do not readily putrefy by keeping.—See *Herrings*.

FISH, To COOK.—The method of cooking fish is a circumstance also of some importance. Frying them in oil or lard is objectionable, and the boiling process is best adapted to render them wholesome. Stewed fish, with all the usual additions of glutinous and stimulant materials, are extremely injurious to dispeptics. The objections urged against salted meats apply equally to salted fish; they are, however, rendered less injurious by a plentiful admixture of potatoes, an esculent root, which, with the exception of parsnip, is the only vegetable that ought to be eaten with any species of fish; and invalids would do well, during the use of fish, to abstain from fruit. Cullen, by way of experiment, took apples after fish; but he always experienced a disturbance afterwards in his digestive organs. Milk may also be considered as another aliment incompatible with fish; since serious affections of the bowels have been known to be the result of such an admixture. It is usual to add various condiments to fish, many of which are thus, doubtless, rendered more easy of digestion by affording a necessary stimulus to the stomach; but rich sauces are ever to be avoided by the valetudinarian. Vinegar and salt are the most simple and natural additions.

Shell-Fish have been greatly extolled by some physicians, as nutritive and easily digestible articles of food. Some of them, however, it would seem, enjoy a reputation which they do not deserve: oysters, for instance, when eaten cold, are frequently distressing to weak stomachs, and require the aid of pepper as a stimulant; and since they are usually swallowed without chewing, the stomach is subjected to an additional labour in order to reduce them into chyme. When cooked, they are still less digestible, owing to the change produced in their albuminous principles. Still they are nourishing, and contain a considerable quantity of nutritive matter in a small compass—a circumstance, strange as it may appear, affords another objection, but one that is easily remedied, to their use—since quantity is often more essential than quality—that is, bulk is necessary in the stomach, for the want of which, its powers are not uniformly exerted.—See *Oysters.*

Lobsters are nutritive, but they are exposed to the same objection, on the ground of indigestibility; and such have been their effect upon certain stomachs, as to have raised a suspicion, that they contained something of a poisonous nature. Lobsters have occasioned pain in the throat, as well as eruptions on the skin, and even extended their morbid influence to the production of pain in the stomach, and affection of the joints. In the London market they are exposed for sale in an underboiled state, in order that they may keep the better; and in that they are highly indigestible. The same remarks apply to the crab.—See *Lobster.—Crab.*

Shrimps are a species of sea-crab, which vary in their colour and size, and are considered earsier of digestion than the preceding article.—See *Mussel.*

The cutaneous efflorescence, before observed, which is produced by the imperfect digestion of shell-fish, has been remarked to occur more frequently where the fish consumed has been stale and tainted; although it happens equally where no such dietetical error can be traced.

Upon the whole, fish afford but a weak nourishment: they are more or less difficult to digest, according to the different kinds of water in which they live. Being of all animals the most putrescible, they are much inferior in quality to birds and quadrupeds, on which account they ought not to be eaten by feverish patients or convalescents. Their fat is still more insoluble and indigestible than that of any other animals, and readily turns rancid. On account of their indifferent qualities, no satiety is more nauseous than that of fish. Acid sauces and pickles, calculated to resist putrefaction, render fish somewhat better and more wholesome for the stomach, while butter has a tendency to prevent digestion. On the contrary, spice and salt used in moderate quantities, stimulate the fibres of the stomach to exert their action, and facilitate the digestive process. Fish dried in the open air, and afterwards boiled soft, are easily digested—but all salted, as well as smoked fish, are injurious to the stomach, and afford but little nutrition. The same remark, though in an inferior degree, applies to fish preserved in vinegar and spice. In general the heads and tails, which contain the least fat, are the lightest parts for digestion; and, on the contrary, the belly is the heaviest. Such as have tender flesh are sooner digested than those of a hard and tough consistence.

Soft and mucilaginous fish, like the eel, are partly composed of an oily slime, partly of tough fibres, and therefore not easily digested. Those living in ponds, ditches, and other standing waters, are certainly less wholesome than river fish, whose exercise is greater, and whose natural element is purer. For standing water easily corrupts, and the fish lodging in the mire of such reservoirs, continually feed upon the putrid parts. But the same kind of river-fish are also of different qualities, according to their different nourishment. Hence, those caught in rivers contiguous to great towns, are less wholesome than others; because they necessarily imbibe great quantities of the impurities thrown into such receptacles.

FISH SAUCE.—Take port wine, 1 gallon; mountain, 2 pints; walnut ketchup, 4 pints; anchovies and liquor, 2 lbs.; lemons, No. 8; shalots, 3 dozen; cayenne pepper, q. s.; scraped horse-radish root, 2 lbs.; mace, 1 ounce; flour of mustard, 8 ounces; boil up gently, strain and bottle.

2. Anchovies, No. 24; shalots, No. 10; horse-raddish root scraped, 3 spoonfuls; mace, cloves, lemons sliced, No. 2; anchovy liquor, 8 ounces; Hock or Rhenish wine, 2 lbs.; water, 1 lb.; boil to 2 lbs., strain; add walnut ketchup 6 ounces, and bottle.

FISH, *Preservation of.*—Fish may be preserved in the same way as beef or pork, either by dry-salting or pickling. The former method is employed to a great extent on the banks of Newfoundland, and in Shetland. Dr. Hibbert thinks that the cod-fish prepared in Shetland will always maintain its pre-eminence over that of all other places. The fish in Newfoundland are said to be exposed, after being salted, in standing flakes made by a slight wattle, and supported by poles often twenty feet from the ground. But the humidity is not nearly so well extracted from the fish as when, according to the Shetland method, they are carefully laid out upon dry beaches, the stones of which have been exposed during the winter to the abrading action of the ocean, and are thus cleansed from animal and vegetable matter.*

It has been ascertained that the antiseptic quality of sugar is sufficient to preserve fish in the most excellent condition. This substance is so active, that fish may be preserved in a dry state and perfectly fresh, by means of sugar alone, and even with a very small quantity of it. Salmon, whitings, and cod, have been kept for an indefinite length of time; and, by this simple means, fresh fish may be kept in that state some days, so as to be as good when boiled as when just caught. It is added, that if dried and kept free from mouldiness, there seems no limit to their preservation; and they are much better in this way than when salted. The sugar gives no disagreeable taste. This process is particularly valuable in making what is called kippered salmon; and the fish preserved in this manner are far superior in flavour and quality to those which are salted or smoked. If desired, as much salt may be used as to give the taste that may be required; but the substance does not conduce to their preservation. In the preparation it is barely necessary to open the fish, and to apply the sugar to the muscular part, placing it in a horizontal position for two or three days, that this substance may penetrate. After this it may

* Edinburgh Philosophical Transactions. No. 3, p. 144,

be dried; and it is only further necessary to wipe and ventilate it occasionally, to prevent mouldiness.

A table-spoonful of brown sugar is sufficient in this manner for a salmon of five or six pounds weight; and if salt is desired, a tea-spoonful or more may be added. Saltpetre may be used instead, in the same proportion, if it is desired to make the kipper hard.

FISH, TO CARVE.—There is little difficulty in cutting up and serving fish; few rules, therefore, or observations will be requisite.

Salmon.—The belly part is the fattest; it is therefore customary to give those who like both back and belly some of each; most people who are fond of salmon generally like the skin, so that the slices must be cut out thin, skin and all.

Turbot.— Enter the fish slice in the middle, over the backbone, and take off a piece of the fish as much as will lie on the slice on one side, close to the bones; the thickest part of the fish is always the most esteemed.

Soles.—These may be either boiled or fried; you must cut them right down the middle, bone and all; and give a piece of the fish, in proportion to the size of it, to each person.

Cod's Head.—When in season, a cod's head and shoulders, properly boiled, is a very genteel and excellent dish. The parts about the backbone on the shoulders are the best and firmest. With each slice of fish give a piece of the sound, which lies underneath, and lines the back-bone; the meat of which is thin, and a little darker coloured than the body of the fish; about the head are many epicurean bits, and a great deal of the jelly curd, which lies principally about the jaw bones and firm parts of the head. Some esteem the palates; others are fond of the tongue, which may be got at by putting a spoon in the mouth.

Mackerel.—Slit this fish along the back with a knife, and take off one whole side, not too near the head, because the meat about the gills is generally black and ill-flavoured.

Eels.—Cut these into pieces quite through the bone. The thickest parts are most esteemed.

Besides these, there are other little articles brought to the table; but as they are merely simple in their nature, a little observation and practice will make complete proficients in the art of table dissection.

In helping your guests to fish, be careful not to break the flakes, which in cod and very fresh salmon are large, and contribute much to the beauty of the fish. A fish-knife, not very sharp, is the best instrument to divide fish with. Help always a part of the roe, melt, or liver, to each person. The heads of carp, parts of those of cod or salmon, cod sounds, turbot's fins, are likewise esteemed as dainty bits, and require attention accordingly.

FISH, IN SEASON.—See p. 123.

FLAN.—A French custard.

F L A S H.—Extract of capsicum with sugar (but sold as burnt sugar) and isinglass; used to colour brandy and rum, and make them appear stronger.

FLOUNDER.—The flounder is much of the same nature and nourishment, though somewhat firmer, as the plaice.

FLOUR, WHEATEN.—The most nourishing of the flours, as containing a substance of an animal nature, called the gluten of flour, and which also causes it to make the best bread, when properly fermented; the mixture of the flour and water being raised by a portion of old dough, leaven, or the froth of fermented wort, yeast, or barm. Six sorts of wheat flour are sold in London; fine flour, second flour, middlings, fine middlings, coarse middlings, twenty penny flour; all depending upon the fineness of the sieves.

A bushel, or 61lbs. of wheat, produces, on grinding, 60¾ lbs. meal, which, by dressing, is resolved into 48 lbs. second flour, 4½ lbs. fine pollard, 4 lbs. coarse pollard, and 2¾ lbs. bran; 2 lbs. being lost in the process. A sack of second flour, or five bushels, weighing by law 250 lbs., requires generally 3 or 4 ounces alum, sometimes from 2 to 8, with 4 lbs. common salt, half a gallon yeast, and about 3 gallons of water, producing about 80 quartern loaves, sometimes 82 or 83. A sack of flour, 3 ounces alum, 6 lbs. common salt, one bushel potatoes, 3 lbs. yeast, with water q. s., produces a white, light, and highly valuable bread. A sack of indifferent flour, 1 lb. magnesia, with salt, yeast, and water as usual, makes excellent bread.—See *Bread.*

It is generally supposed that an imperfect kind of fermentation, analogous to that in the preparation of wine or beer, takes place in making bread, but others deny this, because this dough does not yield any ardent spirit on distillation, although the same dough diluted with water, and left to ferment for sixteen hours, yielded a portion of spirit; the dough also falls so rapidly, that it cannot be supposed the fermentation is finished. The bakers, in summer time, when the yeast is turned acid, are in the habit of adding a little sub-carbonate of potash or of ammonia, which raises the dough in a few minutes; mineral waters containing much carbonic acid raise the dough without the addition of yeast; and other substances which contain much enveloped air, also render the dough spongy, as eggs beaten to a froth, or snow water.—See *Yeast.*

FLOUR, Barley.—When made into bread with yeast, it requires the dough to be baked very soon after it is made, as it grows sour almost immediately. A paste of barley meal and water is also used to take the hair off skins, previous to their being tanned.

FLOUR, Rye.—Used to make either a sweet bread, raising the dough by yeast, or an acid bread, by using leaven for that purpose; this last is cooling, not so nourishing as the former, but more suited to an animal diet.

FOOD.—In the most extensive signification of the word, food implies whatever substances are taken into the body, solid or fluid; but, in ordinary language, it is generally used to represent only the more solid part of our aliment.—See *Aliment.*

In the early ages of the world, men we are told, subsisted chiefly upon such plants and fruits as the earth spontaneously produced: from these they proceeded to eat the flesh of wild animals taken in hunting; but the numbers of the latter decreasing, and mankind multiplying, their wants taught them the necessity of tilling the ground, that its fruits might be more abundantly increased. In process of time, to aid their mutual wants, and to protect the weak against the oppression of the strong, men, by general consent, began to assign to each other portions of land, to produce them the supply of vegetables; reason, soon after, suggested the expedient of domesticating certain animals equally to assist them in their labours, and to supply them with food. Hogs, we are told, were the first domesticated animals that appeared on their tables, as then they held it to be ungrateful to devour the beasts that assisted them in their labours. When they began to make a free use of domestic animals, they only roasted them: boiling was a refinement in cookery to which for some ages they were strangers; and fish, living in an element which men were unaccustomed to, were not eaten till they became somewhat more civilized.—See *Vegetables,* &c.

FOOD, ANIMALS DESTINED FOR.—Animal substances are for the most part considered as safe articles of food. As regards the higher classes (the mammalia and birds), this observation is universally true of those in a state of health. There are some exceptions among the fish tribe, which depend either upon the constitution of certain individuals, or upon some singularity in the nature of the particular fish, by which it becomes poisonous, although the species generally may be wholesome and nutritious.—See *Fish, Poisonous.*

As we descend lower in the scale of animals, the above exceptions more frequently occur, and more species are absolutely and universally unwholesome, or furnish poisons hurtful to every constitution. In the vegetable kingdom the alimentary vegetables form but a small proportion of the whole, and almost an equal number are absolutely poisonous, or at least injurious, except when given in small quantities, for the purpose of counteracting some existing disease.

The flesh of quadrupeds, although it furnishes articles which may safely be used as food, differs considerably in some of them, both as regards its palatability and its nutritious properties. In like manner, there is no part of this class of animals that may not be, and which indeed is not used as food, although the flesh or voluntary muscles upon the limbs, trunk, and head, is by far the most considerable and important. The heart, the largest of the involuntary muscles,* is also commonly eaten; and the brain and spinal marrow, or pith ; all the glands, kidneys, liver, and sweet bread ; the compound internal organs ; the lungs, stomach, and intestines ; the womb, placenta, and even the contents of the stomach; the fat, and marrow of the bones; the blood and skin are all nutritious, and some of them highly prized ; and even the bones themselves can be made to furnish most wholesome nutrition. The milk also of all quadrupeds is alimentary, and generally agreeable and very grateful to the palate. Although each of the above organs contain several immediate principles, chemically considered, they are nevertheless characterised by some in their composition. The muscular flesh principally consists of *fibrine*, combined with some gelatinous mucus and *ozmozome ;* the tendons of the muscles, on the contrary, are little less than *gelatine* in a very dense form. It is also the case with the skin, the membranes in general, and the ligaments. Brain, and medullary nervous matters consist chiefly of coagulated albumen, which also perhaps enters largely into the composition of glands. The fat, suet, and marrow of the bones, are different forms of concrete animal oil. All these principles are digestible and nutritious ; but in what comparative degree, is far from being ascertained. According to popular opinion, it is nearly inversely as their solubility in water; muscular flesh being considered to furnish the strongest aliment, and gelatinous organs the lightest. These substances, however, are not precisely the same in all animals, nor even in the same animals at different periods of life. See *Albumen, Fibrine, Gelatine, Osmazome,* &c.

I. *As regards the age and size of animals destined for food,* it is generally considered that in proportion to the age, the flesh and other parts belonging to the individual are coarser or more delicate, not only when different in kind, but in different varieties of the same species, although well-grown animals of the same variety are always better than those that have not been sufficiently nourished. For instance, the flesh of the elephant and the rhinoceros have been found to be exceedingly coarse and unpalatable, whilst that

* Those muscles over which animals have no control, are called involuntary, that is, those over which it is not in our power to exert any voluntary influence, *e. g.* the heart.

of the rat and smaller species of quadrupeds is very delicate.

The larger varieties of the ox and sheep are also inferior to the smaller, as the kyloes of the western islands, the Welsh sheep, and those in the Highlands of Scotland. The whole of the organs of young animals are much more gelatinous than those of the adult and aged, while they again contain more fibrine and extract. Hence the flesh of young animals is more bland and tender, and yields most to the action of boiling water, while that of aged animals is more savoury, even to rankness, and is firm, to toughness. The flesh of very young animals is unpleasantly soft and flabby to the palate—qualities of which every one is a judge; but at no period of life, even at the fatal state, actually unwholesome; consequently there was no reasonable ground for that enactment which provides, that "no butcher shall kill any calf to sell, being under five weeks old."—*Stat. I. James*, c. 22. § 2. 22.

Very large cows, with calf, may, indeed are, frequently killed, and the fœtus is always sold as very young veal, and by some people preferred to that of a more mature nature. Calves are killed by our butchers at from six to sixteen weeks, but they are reckoned best at ten or twelve. Lambs are generally killed at the age from two to six months. The beef of the larger breed of oxen is in greatest perfection when the animal is about seven years old; that of the smaller breeds, a year or two sooner. Cow-beef, on the contrary, can scarcely be too young. The flesh of a young heifer is highly esteemed—that of an old fattened cow is very bad. Wedder mutton is in perfection at five years. Ewe mutton is best when about two years old. Sucking pigs are killed at about three weeks old: but pork differs from other kinds of butchers' meat in not requiring age to mellow it; so that swine, for pork, are killed at from six to twelve months old; but for brawn, age is an advantage, or rather, in fact, it is necessary. The buck of the fallow-deer may be killed at six, but it is better at eight years of age. The female, in general is naturally more tender; but getting tough rather than mellowing by age, is sooner in perfection.

The flesh of quadrupeds in the vigour of life is more stringy, and again turns shorter as it advances to old age, when it becomes dry and destitute of nourishment. Young animals also differ from old ones in the distribution of the fat, which, in the latter, is chiefly collected in masses, or layers, external to the muscles; and in the former it is more interspersed among the muscular fibres, giving the flesh a marbled appearance, which is always a desirable property in butchers' meat.

II.—*The sex of animals intended for food, has considerable influence over the quality;* that of the female being always more delicate and finer grained than that of the entire male, whose fibres and taste are stronger and more rank. The influence indeed of the genital organs over the flesh of animals, is very considerable. The flavour of the female is even improved by removing the ovaries, or, as it is termed, by spaying them. Every day the testes are permitted to remain, even though totally inactive with regard to their proper function, injures the delicacy of the veal of the bull-calf; an animal which is not castrated until after puberty, always retains much of the rankness and coarseness of the entire male. Daubenton directs the male lambs to be castrated at from eight to fifteen days after they are born, although it is not customary to perform the operation until the age of three weeks, or even five or six days.—(See *Instructions pour les Bergers, par J. B. Huzard, &c.*). But the flesh of lambs is never so juicy and good as when they are castrated at eight days. The editor of Daubenton (4th edition, M. Huzard) goes still farther, and recommends this operation to be performed in a day or two from the birth, or as soon as the testes descend into the scrotum. The female lambs are also occasionally spayed in France, to render their flesh more delicate, and improve the wool; but this operation cannot be performed until the ovaries have acquired a sufficient size to be brought out with the finger, when they are about three weeks old.

In this country the sow pigs which are not kept for breeding, are all spayed when about four weeks old; the boar pigs are castrated a week sooner. On the other hand, the males of those races in which the testes are active only at certain seasons, as the deer tribe, have the coarse rank flesh of entire males only when rutting; and at all other times they resemble much more the castrated individuals of those animals, such as the bull, which are always capable of procreating their species. Even with the ram, there is a short period when the flesh is less rank; and during the rutting season, it is intolerable. Buck venison is highly esteemed—the boar is preferred for making brawn.

III.—*The quality of the food and the manner in which the animal has been fed, have also considerable influence over the flesh.* For the most part, the lean of fat animals is better than that of those that are poorly fed; and perhaps an animal in a state of nature can never be too fat. Artificial fattening may, however, be carried too far, and the practice of feeding oxen on oil-cake for the market is now laid aside, in consequence of its giving a rancid and unpleasant flavour to the beef. Also, morbid or unwholesome fatness, such as that which takes place in the first stage of the rot, and which, it is said upon very good authority, some butchers induce artificially is certainly not desirable. "Several graziers and butchers having observed, that sheep are much disposed to feed during the first stage, or four weeks after being tainted, omit no opporttuniy of producing it, to increase their profits."—See *Inquiry into the Rot in Sheep and other Animals, by E. Harrison,* M.D. F.R.A.S. 8vo. Lond. 1804. But it is only in regard to fatness that the flesh of animals is affected by the nature of their food, for its flavour is materially changed by it; and an epicure will readily distinguish by the taste, whether mutton of the same race has been fed upon turnips, or upon the natural grasses of a highland farm.

In pork, the fat of the food is more apparent than in any other kind of butchers' meat. The fat of pigs fed on skimmed milk though sour, is firmer and vastly superior to that of hogs fed upon pease or meal; and Mr. Jackson says we have no pork in England or Ireland equal to that in Sardinia, where the hogs are almost wild, and fattened upon chestnuts.

IV. *The influence of the season on the quality of butchers' meat,* depends upon the more or less plentiful supply of food, upon the periodical change which takes place in the body of the animal, and upon temperature. In and out of season, are words often vaguely applied, meaning most commonly and correctly, the season of the year in which the substance is naturally in a better or worse state; also occasionally expressing the good or bad condition of the individual animal, without any regard to the state of the species in general; and, lastly, and most improperly, meaning that it is at that time desired or rejected by the higher orders of society, as being rare or common.

The flesh of most full grown quadrupeds is in highest season during the first months of winter, after having enjoyed the advantage of the fresh summer food. Its flavour then begins to be injured by the turnips given as winter food; and in spring, from a deficiency in food, it grows lean.

Beef and mutton, also veal, although they are never absolutely out of season, that is, not fit for the season, are in the greatest perfection in the months of November, December and January. Pork, during the summer months is absolutely bad, or out of season, and is only good in winter. The males of the deer tribe are in highest perfection from the middle of June to the beginning of September, when they begin to rut; after which they become thin and exhausted. Females generally are out of condition when they are suckling, or have lately given suck. Does which have no kid, or were soon deprived of it, follow the general rule of castrated animals, and are in season from the middle of November to the middle of February. Their condition is not much affected during the first months of pregnancy.—See *Beef*, *Mutton*, *Veal*.

The season of the year when the young of quadrupeds have acquired the proper age for being used as food, is the period when they are in the greatest degree of perfection. This is naturally in the summer months, when lamb, veal, and fawns are most abundant. But breeders continue to furnish the tables of the wealthy with the first two of these articles at almost every season of the year, by selecting certain breeds, such as the Dorsetshire sheep, which lamb very early, or by treating them in such a way as to cause the female to come in heat at an unnatural time. In this way lamb is procured as an article of luxury, as early as November and December; and, on the contrary, by keeping the ewe in cold poor hilly pasture, the lambing season is retarded.

V. *The manner in which animals are slaughtered, or deprived of life,* has also considerable influence over the flavour of the flesh. The greater number of those slaughtered for food are either bled to death, or are blooded profusely immediately after being deprived of life in some other way. The method most commonly adapted in this country, of killing cattle, is by striking them on the forehead with a pole axe, and then cutting their throats to let the blood escape—a method, cruel and not free from danger; inasmuch as the animal is not always brought down with the first blow, and the difficulty and uncertainty of being able to repeat it, as well as the risk of accidents, should the animal not be well secured. On this account, Lord Sommerville endeavoured to introduce the method of *pithing* or *laying* cattle, by dividing the spinal marrow above the origin of the Phrenic nerves, as is commonly practised in Barbary, Spain, Portugal, Jamaica, and now in some parts of England; (See *General Survey of the Agriculture of Shropshire, by Joseph Plymby,* M. A. 8vo. Lond. 1803, p. 243); and it is observed by Mr. Jackson, that "the best method of killing a bullock is by thrusting a sharp-pointed knife into the spinal marrow, when the bullock will immediately fall without any struggle, then cut the arteries about the heart." See *Reflections on the Commerce on the Mediterranean. By John Jackson, Esq.* F. S. A. 8vo. Lond. 1804.

Although the operation of pithing is not so difficult, but it may, with some practice, be performed with tolerable certainty; and although Lord Sommerville took a man with him to Portugal to be instructed in the method, and has made it a condition that the prize cattle shall be pithed instead of being knocked down, the practice nevertheless is not become general among us, owing, doubtless, in a great measure to prejudice. We are told that the flesh of the cattle killed in this manner in

Portugal is very dark, and soon becomes putrid, perhaps from the animal not bleeding freely, in consequence of the action of the heart being interrupted before the vessels of the neck are divided. It seems, therefore, after all, to be best to bleed the animal to death directly, after the manner of the Jew butchers. The Mosaic law so imperiously prohibits the eating of blood, that the Talmud contains a body of regulations concerning the killing of animals; that the Jews, as a point of religion, will not eat the flesh of any animal not killed by a butcher of their own persuasion. Their method of depriving the animal of life, is to tie its four feet together, thus bringing it to the ground, and turning its head back to cut the throat at once down to the bone, with a long, very sharp, and not pointed knife, thereby dividing all the large vessels of the neck. In this manner the blood is quickly and completely discharged. The effect of this method is so obvious, that some Christians will eat no meat but what has been killed by a Jew butcher.

Sheep, lambs, calves, and pigs, are all killed by dividing at once the large blood vessels of the neck. Animals killed accidentally, that is, by hanging, drowning, falls, ravenous beasts, or frozen to death, are not absolutely unwholesome. In fact, they differ from those more methodically killed, in not being blooded; which is also the case with animals that are snared, and those killed by hounds. Animals that die natural deaths ought not to be eaten; as there are many undeniable instances of disease having been the consequence.

Previous to killing animals, they are generally made to undergo some preparation. They are usually kept without food for some time, for were they slaughtered with full stomachs, their flesh, it is thought, would not keep well. Oxen are made to fast two or three days; smaller animals a day; but it is evident that the practice should not be carried too far, as an opposite effect might be produced by the animal falling off, or getting feverish. In order to have white veal, it is generally understood that the calf is repeatedly and largely bled before it is killed. Such practice, however, does not appear to be general; the feeders, themselves, deny it, and it is not confessed by the butchers; consequently, we are not enabled to say what its effects would be; but Dr. Lister states, that nothing contributes more to whiteness and tenderness of the flesh of calves, than often bleeding them, by which means the colouring matter of the blood is exhausted, leaving behind nothing but colourless serum. A method of preparation still more cruel, used to be practised, though illegal, and nearly, if not entirely, obsolete, with regard to the bull. By some old municipal laws, no butcher was permitted to offer or expose any bull-beef for sale, unless it had previously been baited. The reason of this probably was, that baiting the animal had the effect of rendering the flesh or muscular fibre much more tender; for it is an universal law of the animal economy, that, when animals have undergone excessive fatigue immediately before death, or have suffered from a lingering death, their flesh, though it becomes sooner rigid, also becomes sooner tender, than when suddenly deprived of life in a state of health. The flesh of hunted animals is sooner tender, and sooner spoils, and it is upon this principle, that the quality of pigs' flesh could be improved by the horrid cruelty of whipping them to death, said to be practised by the Germans. (Vide, "*Reserches Pathologiques de Physiologie et de Chimie Par P. N. Nyster*. 8vo. *Paris*. 1811). Another part of the same recipe to roast a pig, wild-boar fashion, consists in making the animal swallow, some hours before killing it, a quantity of vinegar aromatized with herbs. This culinary occurrence we have merely noticed because the action of vinegar, given to animals, a few hours before death, in rendering the fibres mellow, deserves to be examined.

In this country it is no uncommon thing to give poultry a spoonful or two of vinegar before they are killed, after which they are to be immediately dressed for the table. Popular practices are seldom without some foundation, and with this is connected the popular fact, that acetic acid or vinegar has a peculiar chemical action upon fibrine. The Moors in West Barbary, before they kill a hedge-hog, which with them is esteemed a princely dish, rub his back against the ground, by holding his feet betwixt two, as men do a saw, when they are sawing stones, till it has done squeaking, and then cut its throat. Vide *Jones, in Philosoph. Trans.* No. 254.

FOOD, Animal varieties of.—From the order of wild animals *(Feræ)* mankind have long derived the principal part of their nutriment, especially in the earlier periods of society. The flesh of the common seal a few centuries ago was served up at the tables of the great in this country; and it still forms the principal subsistence of the Greenlanders, Icelanders, and Kamschatkadales. There are few of the first order (Primates) of the class Mammalia (see *Mammalia*) eaten. In some countries, however, several species of the ape tribe are eaten—of these are the Barbary ape, the preacher monkey, and the four-fingered monkey. Some species of the bat tribe are occasionally eaten by the natives of warm climates, especially the vampyre bat. Of the second order (Bruta) several genera afford nourishment to uncivilized tribes. The great ant eater is frequently eaten by the American Indians; but its flesh has a strong and disagreeable smell. Most species of armadillo form an article of diet among the Indians. The flesh of the two horned rhinoceros is eaten in Myssina, but its flesh is very sinewy. The flesh of the elephant is often eaten in the same country, as well as by the Hottentots: also several species of the walrus.

It may also here be noticed, while we are thus detailing the many curious dishes of olden time, the singular diet of two or three of antiquity, mentioned by Herodotus (lib. iv.) "The Androphagi, the cannibals of the ancient world, greedily devoured the carcasses of their fellow-creatures; while the inoffensive Cabri, a Scythian tribe, found both food and drink in the agreeable nut of the Pontic tree. The Lotophagi lived entirely on the fruit of the lotus tree. The savage Troglodyte esteemed a living serpent, the most delicious of all morsels, while the capricious palate of the Zyguntini preferred the ape to every thing." *Warner's Antiq. Culin.* p. 135.

a. The Bear.—The brown or black bear is eaten by the common people in Norway, Russia, and Poland. It is difficult of digestion, and is generally salted and dried before it is used.

b. The Dog.—Of the dog tribe, few species have been employed as food; though the common dog is voraciously eaten by the inhabitants of the South Sea islands; and is used sometimes for food in more civilized societies.

c. The Otter.—The common otter is eaten in some Roman Catholic countries, and considered as nearly allied to fish. The young of the sea-otter, are said to be delicate eating.

d. The Lion.—Of the cat tribe, the flesh of the lion is considered an excellent article of food by several natives of Africa.

e. The Opossum.—Several species of the opossum are considered by the natives of South America, as equally good for food with the flesh of the hare or rabbit, especially the Virginian opossum.

f. The Kangaroo forms a chief part of the animal food used by the natives of New Holland, but the flesh is very coarse.

ORDER GLIRES.

1. *The Porcupine*—The common porcupine is eaten in Sicily and Malta; also, by the Barbary Moors; and it is frequently introduced to the politest tables at the Cape of Good Hope.

2. *Cavia.*—Several species of cavia are used as food in Great Britain, Brazil, and other parts of South America, especially the guinea-pig—the spotted cavy, the long-nosed cavy, and the rock-cavy.

3. *The Beaver.*—The flesh of the beaver is used as food in South America, and is said to be excellent eating. It is preserved by drying it in smoke.

4. *The Marmot.*—The marmot of the Alps affords nourishment to the poorer inhabitants of the Tyrol, Savoy, and other parts of the Alps; and, besides this, three other species are eaten—namely, the Maryland marmot, bobath, and the cassin or earless marmot.

5. *The Squirrel.*—Several of the squirrel species may be eaten, especially the common squirrel, which is much used in Sweden and Norway; and its flesh is said to resemble that of a barn-door fowl.

6. *The Jerboa.* — The common jerboa is eaten by the Arabs, who esteem its flesh among their greatest dainties.

7. *Hare and Rabit.*—Most of the species to which these two well-known animals belong, are used as common food—especially the common hare and rabbit. Of the two, the flesh of the rabbit is more delicate than that of the hare; but it is not so nourishing as the latter. Wild rabbits are not only more digestible, but more palatable than such as are domesticated.—See *Hare.*

ORDER PECORA.

It is from this order that the principal part of animal food, in civilized countries, is derived. Almost all the animals contained in this order, as sheep, oxen, &c., form excellent food.

Some species of the camel tribe are eaten, especially the Arabian camel—the *Glama*, whose flesh is said to resemble mutton.

Of the genus *Cervus*, or stag tribe, the following species are the most used:

The Elk is eaten in Norway, Lapland, and Sweden, where its flesh is much esteemed. It is very nourishing, but remains long in the stomach.

The Stag. The Common Stag.—The flesh of this animal, when full-grown, is well known under the name of *venison*, and is very digestible, wholesome, and nourishing.

Rein Deer.—The flesh of this species forms the principal nourishment of the Laplanders; the tongues are excellent when salted, and the milk is sweet and nourishing.

Roebuck.—The flesh of the roebuck is considered inferior to that of the following.

Fallow Deer.—The flesh of this species is a variety of venison, and nearly resembles that of the stag. The buck is preferred.

Of the *Genus Antelope*, almost all the species afford excellent food; but the chamois is most generally employed. The flesh of the young ibex is also excellent.

Goat.—Of the common goat, only the young are employed as food; and a roasted kid is a very common dish in America and the West Indies.—See *Mutton,—Lamb,—Ox-beef,—Bull-beef,—Cow-beef,—Veal,—Venison, &c. &c.*

ORDER BELLUÆ.

Horse.—The flesh of the horse may be eaten, but is very coarse. Mares' milk is often used medicinally, but is considered inferior to that of the ass.—See *Asses' Milk.*

Tapir.—The flesh of the *Tapir* is much esteemed by the inhabitants of South America, but is inferior to our beef.—See *Hog*, *Bacon*, *Sucking Pig*. See also, *Butchers' Meat to choose*.

FOOD, Reptiles used as.—Compared with other living creatures, very few reptiles are used as aliment, and this most probably more on account of their disgusting appearance, than of their being noxious or unpalatable, as some of the greatest luxuries of the table belong to this class of animals. Besides the green turtle, several other species of the *testudo* are eaten, especially the Grœca Europœa and ferox. Of the lizard kind, the dracœna, amboinensis agilis, and iguana, are eaten. The flesh of the last is said to be delicious, but unwholesome, especially to those affected with syphilis, which, however, is a vulgar prejudice. The lacertus scincus, (sconk) is held in estimation by the natives of the east, as an aphrodiniac. The eggs of the iguana, and of most species of testudo, even of those whose flesh is said to be bad, as of the Imbucato, are nutritious and agreeable. The flesh of the colubic natrix is eaten in some places; and the viper itself, whose bite is poisonous, furnishes a nutritious broth to invalids. The rana esculenta of the frogs is an epicurean dish with our Continental neighbours. The bull frog, in the opinion of our transatlantic descendants, rivals the turtle. The rana combina, though a toad, is also eaten in some places as fish.

There are doubtless many other reptiles eaten as food in some countries, nor are we aware of a single instance where injurious effects have been produced by any that has hitherto been tried. This flesh in general seems to be delicate and gelatinous; the fibre to resemble that of chicken or veal, and what is called the green fat of turtle is in reality gelatinous, like the skin of a calf's head, or the tendons of ox-heel, which are employed to make an imitation of it.

We are but little acquainted with the circumstances which influence the quality of reptiles, as esculent, but modern gourmands say the best size of a turtle for taste is from sixty to eighty pounds, which is scarcely a tenth part of the size to which they attain; and it may be presumed, that like most other oviparous animals, they are best before they begin to lay their eggs, and are out of season sometime after. Turtles frequently become emaciated before they reach this country; in this case the soup made from them would be incomparably improved by adding a good calf's head to it. They are well known as a nourishing and palatable food.

Hence, of this class (*Amphibia*) the following are most commonly employed, viz. the green and land turtles, the edible frog or green water frog, the common lizard, the sconk; of serpents, the viper, and the adder. The esculent frog, though not very nutritious, tastes much like chicken; the viper and adder are chiefly used in soups, which are considered as great restoratives.

FOOD from insects and worms.—With the exception of various species of the crab, insects are not used in substance as food. Of this class the following may be enumerated as ordinary aliment. The common crab, the black clawed crab, the lobster, the craw-fish, the prawn, the shrimp, the white shrimp. Under this class the honey of the bee may be ranked, which in its general alimentary properties, agrees with sugar; it is, however, rather more heating, and will not agree with many stomachs. It is best eaten from the comb, as the wax seems to correct its unpleasant effects.*—See *Honey*.

* The Moors in the West of Barbary, esteem as delicious, honey-comb with

(*Worms.*)—The sepia sepiola, and the eschinus esculentus, are the only edible genera of this order of worms, and even these are coarse, and by no means a nourishing food. Among the testaceous order may be set down, the common cockle, the common oyster, the eatable mussel, the common snail,—of these, the oyster and snail, are the most wholesome and most digestible. The limpet, perriwinkle, and whilk, are eaten boiled by the common people of this country; and the *Helix Pomatia*, is reared and fattened with great care in some countries of Switzerland.

FRANGEPANE.—Skimmed milk, evaporated to dryness, by a gentle heat, used to form artificial milk.

FRENCH WINES.—The wines of France are peculiarly excellent; and though they differ very sensibly from their taste and properties, there are few constitutions, be they ever so valetudinary, to which some one or other of them is not adapted. The author of the Seasons has thus characterised some of them:

The Claret smooth and red,
The mellow tasted Burgundy, and quick
As is the wit it gives, the gay Champagne.

Thomson.

At Clairvaux, a small town in the department of the Aube, in France, there are several enormous casks, which will contain from one to four hundred tons of Champagne; and the famous tun of St. Bernard, will hold 1,612,800 pints of wine. In these capacious vessels, wine is sometimes kept for the space of ten years.—See *Champagne*, &c.

FRUIT.—Under this head are comprehended the productions of different trees and shrubs, and may be arranged under the following heads:—

Apple species.
Farinaceous fruits.
Small berries.
Small seeded fruits.
Stone fruit.—(Which see).

The stone-fruits have been denounced as the least digestible species, by popular acclamation, and we feel disposed to acquiesce in the truth of the assertions as a general proposition; but much of the mischief that has been attributed to their use, has arisen from the unripe state in which they were eaten. They are, however, less digestible than any other species, and more liable to undergo fermentation in the stomach. The hard pulp of certain plums remains also in the alimentary canal for a long time, and is frequently passed without having been materially changed. The ripe peach is the most delicious, as well as one of the most digestible of the stone-fruits; the apricot is equally wholesome, but the nectarine is liable to disagree with some stomachs. Cherries* are far less digestible; their pulpy texture and skins are not easily disposed of by the stomach; and as the sweetest species contain a considerable excess of acid, they may be objectionable in some cases, and desirable in others. The apple species is not so delicate and watery as

the young bees in it, while they still resemble gentles; but Mr. Jones says, that to his palate, they seemed insipid, and sometimes gave him the heartburn.

* The Romans introduced the cherry into England, about 130 years after Lucullus had brought it out of Pontus to Rome: but the Kentish cherry, or the old English variety, with a short stalk, was brought from Flanders by Richard Harry, fruiterer to Henry VIII., and first planted at Teynham. The cherry formerly grew spontaneously, in the woods near Cerusus, a city of Pontus. Hence, according to Servius, the cherry-tree is called *cerasus;* hence, also, the natives denominate its fruit, *cerasa*, and the French, *cerise*. See *Cherries*.

the foregoing fruits, and is less apt to pass into a state of noxious fermentation, but its texture is firmer, and on that account is retained longer in the stomach, and often proves indigestible. The same observations apply to pears, except that their texture being in general less firm, they are less objectionable.—See *Pears.*

The orange, when perfectly ripe, may be allowed to the most fastidious dyspeptic; but the white or inner skin should be scrupulously rejected, for it is not less indigestible than leather.—See *Orange.*

The small-seeded fruits are by far the most wholesome; of these the ripe strawberry and raspberry deserve the first rank. The grape is also cooling and antiseptic, but the husks and seeds should be refused. The gooseberry is less wholesome, on account of the indigestibility of the skin, which is too frequently swallowed. The fruits to be classed under the head of small berries, are the cranberry, the bilberry, and the red whortleberry. These are seldom eaten unless when baked, and in that state, their ascisency seldom proves injurious.

The farinaceous fruits are universally unwholesome. The melon, which is the principal one, is very apt to disagree with weak stomachs, and should never be eaten after dinner without a plentiful supply of salt and pepper.—See *Melon.*

The most proper times for indulging in fruit, appear to be the morning and evening; on some occasions it may be taken with advantage at breakfast, or three hours before dinner; and it forms a light and agreeable repast if taken an hour before bed time, but these regulations are to be influenced by circumstances which no general rules can possibly supply.

By cookery, fruits, otherwise unwholesome, may be converted into a convenient and useful aliment. Apples and pears, when baked, afford a pleasant meal, and from their laxative properties, are well adapted to certain cases of indigestion. Fruit-pies, if the pastry be entirely rejected, may be considered valuable articles of diet. Dried fruits are by no means so useful or safe as is generally imagined. The quantity of sugar which enters into their composition disposes them to fermentation.

FRUITS.—When in Season.

January.

Almonds, Nuts,
Apples, Pears,
Grapes, Services.
Medlars,

February.

Apples, Grapes, Pears.

March.

Apples, Pears, Strawberries, forced.

April.

Apples, Pears.
Cherries, forced. Apricots for tarts.

May.

Apples, Gooseberries,
Apricots, green, Melons,
Cherries, Pears,
Currants, for tarts, Strawberries.

June.

Apples, Melons,
Apricots, Nectarines,
Cherries, Peaches,
Currants, Pears,
Gooseberries, Pine Apples,
Grapes, Strawberries.

July.

Apples, Peaches,
Apricots, Pears,
Cherries, Pine Apples,
Gooseberries, Plums,
Melons, Raspberries,
Nectarines, Strawberries.

August.

Apples, Mulberries,
Cherries, Nectarines,
Currants, Peaches,
Figs, Pears,
Filberts, Pine Apples,
Gooseberries, Plums,
Grapes, Strawberries.
Melons,

September.

Currants, Melons,
Filberts, Pears,
Grapes, Peaches,

Hazelnuts,	Plums,
Lazeroles,	Quinces,
Medlars,	Pine Apples,
Morillo-Cherries,	Walnuts.

October.

Apples,	Medlars,
Bullaces, black and white,	Peaches,
	Pears,
Figs,	Quinces,
Filberts,	Services,
Grapes,	Walnuts.
Hazelnuts,	

November.

Apples,	Medlars,
Bullaces,	Pears,
Chestnuts,	Services,
Grapes,	Walnuts.
Hazelnuts,	

December.

Apples,	Medlars,
Chestnuts,	Pears,
Grapes,	Services,
Hazelnuts,	Walnuts.

Fruits are generally regarded as articles rather of luxury than of food, and were we to form an estimate of their value from their abuse, we should certainly be rather disposed to class them under the head of poisons, than under that of aliments. Nothing can have a more mischievous tendency towards the invalid than large quantities of apples, pears, and plums, in the shape of a dessert, after the stomach has already been loaded, and its good nature taxed to the uttermost by its Epicurean master. But when taken under other circumstances, they contribute to health, and appear to be providentially sent, at a season when the body requires that cooling and antiseptic aliment, which fruits in general are so well calculated to afford.

Fruit in general possesses strongly resolvent powers, and it is the more beneficial as it comes to maturity at a time when the body is relaxed by the heat of summer, and when the blood has a strong tendency to inflammation. It is besides of great service in attenuating the thick bilious impurities collected during the summer, and of evacuating them by its laxative virtues. The acid contained in most kinds of fruits is as useful to quench thirst, as to resist putrefaction. In weak stomachs, however, or such as are filled with impurities and slime, it is apt to ferment, and occasion some inconvenience; but this may be avoided by temperate use, and especially by eating the fruit boiled.

The more sap or juice we meet with in fruit, it will prove the more flatulent; and as the juicy, cooling, and watery species of fruit require strong digestive organs to prevent them from producing fermentation, flatulency, and diarrhœa, a glass of old wine is very proper to promote their digestion. A gentle diarrhœa, brought on by eating ripe fruit in summer, has frequently a salutary effect. Acrid and astringent fruit, being rather a medicine than food, is less hurtful to the healthy and to children than is commonly imagined. Instead of being noxious, as some suppose, in inflammatory disorders, it is of the greatest service. Persons of a thick and languid blood cannot eat anything more conducive to health than fruit, as it possesses the property of attenuating and putting such blood in motion; but those of a watery and phlegmatic constitution ought carefully to avoid it.

Fruit preserved with sugar is antiseptic and nourishing, but at the same time flatulent; and if preserved with sugar and spices, it is heating and drying. It is most wholesome when eaten on an empty stomach, which can exert all its powers to expel the air disengaged from it, and to remove it before it begins to ferment. Boiling as well as drying corrects the flatulent tendency of fresh fruit, so that thus prepared it well agrees with everybody. By either of these methods it is deprived of its superfluous humidity, as well as of its fixed air, whence it becomes more nourishing but less cooling than in the fresh state.

FRUIT, To Gather, &c.—The time for gathering fruits depends much on the exposure; and the manner of gathering influences their keeping. Having prepared the fruit-room, a fine day is to be chosen, and if possible, after two or three preceding days of wet weather, and about two o'clock in the afternoon. The fruit is to be gathered and deposited in moderately sized baskets, taking care that none of it be bruised or blemished, for the injured places soon rot, and spoil the sound parts in contact with it. As summer fruits ripen more quickly after they are plucked, only enough for the consumption of a few days should be gathered at once; by which means they may be enjoyed for a greater length of time. The apples and pears of autumn should be gathered eight days before they are ripe; in fine, there are some kinds of fruit that are never fit for eating on the tree. If they have been necessarily gathered in wet weather, or early in the morning, they should be exposed a day to the sun to dry; and on no account should they be wiped, for it rubs off the bloom, as it is called, which, when allowed to dry in some fruits, constitutes a natural varnish, closing up the pores and preventing the evaporation of the juices. They should not be laid in heaps, which causes them to transpire as well as to undergo a slight degree of fermentation; for fruit thus treated, if it does not spoil, gets dry and mealy; and hence in this country the ordinary apples imported from the Continent are inferior generally to our own.

The principal requisites for a fruit room are great dryness, equality of temperature, and the power of excluding light. Some have a singular way of preserving fine pears, by passing a thread through the stalk, the end of which they seal up with a drop of sealing-wax, enclose each separately in a cone of paper, and hang them up by the thread, brought through the apex. Experience has also proved that grapes keep better when hanging than when laid upon a table. To prevent exhalation, the cut end should be closed with wax. Some hang them by the stalk, others by the point of the bunch, as by this means the grapes are less pressed against each other; but it is necessary in both cases to visit them from time to time, and to cut off with a pair of scissors every berry that is moulded or spoiled.

The following are the principal Stone Fruit of Europe:

Apricot.
Bullace tree.
Common jujube.
Male cornel, or cornelian cherry.
Manured Olive.
Nectarine.
Peach.
Plum cherry.
Wild olive.
Wild red cherry.

Exotics.

Anchovy pear.
Avigate pear.
Cocoa plum.
Common date
Clustered Sebastin, or Assyrian plum.
Malabar plum.
Mango tree.
Oil palm.
Rough-leaved Sebastin.
Sea-side grape.
Umbrella palm.
Yellow Jamaica plum.
Indian jujube.

FRUIT ROOM.—*(For the Preservation of Fruit)*.—The following directions for the economy of a fruit room, (which may be connected with the seed room) are from *Loudon's Cyclopædia of Gardening*.—"This (the fruit room) ought to be well ventilated, for which purpose it ought to have a small fire-place. The fruit room was formerly a mere loft, where fruits were kept on the floor, in common with onions, with no proper means of separation or arrangement for systematic consumption. Now, however, they are regularly fitted up, either with shelves or lattice-work, in which to place sieves of different sorts of fruit, or with close shelves for drawers, boxes, &c. according to the various modes adopted of preserving them. The room may be of any form, but one long and narrow is generally best adapted for ventilation and heating, or drying, when necessary, by a flue. The system of shelves may be placed along one side, and may be raised to the height of six feet or more, according to the number wanted.—These shelves are formed of open work, on which to place square sieves of fruit, each of which should be numbered, and a label or slate containing the corresponding numbers, may be hung up in the room, and opposite each number should be a space for noting down daily the number taken out of each sieve for use. From this table statements may be made, from time to time, of the quantity of fruit on hand for the use of the house steward. *(Maher in Hort. Trans. Vol. II. p.* 76). Forsyth directs that all the floors or shelves on which apples are to be kept or sweated, should be made of white deal, as when red deal is made use of for these purposes, it is liable to give a disagreeable resinous taste to the fruit, and spoils its flavour: when white deal cannot be procured, he advises covering the shelves with canvass. Those sorts of fruit which keep longest are generally best preserved in jars, excluded from the air, and placed in cold dry situations, not under 32° nor above 40° Far.

FRUMENTY. (Pronounced, corruptly, Furmity—derived from the Latin, *frumentum*, corn).—A food, or pottage, made of wheat and raisins boiled in milk. A Yorkshire dish.

FRYING.—To dress meat in a pan over a fire, is called frying; for which process the following directions should be observed. Always keep your frying-pan clean, and see that it is properly tinned. When you fry any sort of fish, first dry them in a cloth, and dredge them with flour; put into your frying-pan plenty of dripping, or hogs' lard, and let it be boiling hot before you put in the fish. Butter is not so good for the purpose, as it is apt to burn and blacken the fish, and make them soft. When you have fried your fish, lay them on a dish or hair sieve to drain, before you send them up to table. When you fry parsley, be sure to pick it very cautiously; wash it well, dip it into cold water, and throw it into a pan of boiling fat; this will make it very crisp, and of a finer green, provided you do not let it remain too long in the pan.

FUEL. — Combustibles fit for kindling and supporting a fire.—See *Cookery, Heat.*

FUNGI, ESCULENT.—See *Mushrooms.*

G.

GADUS.—The name of a genus of fishes of the Jugular tribe. The following species are brought to the European market for the use of the table:—

1. *Gadus Ciliaris.* — The Baltic torsk. The Icelanders prepare it by salting and drying, when it becomes an article of common use, under the name of *Tetteling.* Its flesh is white, tender, and well-flavoured.

2. *Gadus Morhua.*—The cod-fish.

This fish, well known in our markets, abounds in the Northern seas. Its flesh is white, tender, and delicious. When salted, it is also well flavoured, and in general esteem.—See *Cod.*

3. *Gadus Æglefinus.*—The haddock. An inhabitant of the Northern seas of Europe. The larger ones are much esteemed during the winter; the smaller ones for summer use. They are easy of digestion. Salted and dried, they are eaten at breakfast time as a delicacy.—See *Haddock.*

4. *Gadus Minutus.*—Very small, never exceeding six or seven inches in length. It is found in the Mediterranean in great abundance, where it is called a *capelan*, or an *officier.*

5. *Gadus Merlangus.*—The whiting. A delicate white fish, in great abundance in the Irish seas, and German Ocean.—See *Whiting.*

6. *Gadus Pollacius.*—The whiting pollock, found on the rocky coasts of Britain, and other parts of Europe. It is in great esteem for the table.

7. *Gadus Carbonarius.*—The coal-fish. Very abundant on the rocky parts of the Northern coasts of the northern parts of this island, about the Orkneys and the coast of Yorkshire, where they grow to the extent of two and three feet long, and constitute the chief support of the poor.

8. *Gadus Merluccius. The hake.*—A native of the North and Mediterranean seas, not much eaten, except by the poorer classes, when dried; in which state it is called Poor John, or Stock-fish.

9. *Gadus Molva. The ling.*—This grows to the length of five or six feet. It is not so good as the morhua, when fresh; but dried and salted it is much esteemed, and is the common food of the poor in Cornwall, where it is prepared for exportation.

10. *Gadus Lota.*—The Burbot. The flesh of this fish is considered delicious, and of easy digestion.

11. *Gadus Brosme.*—The Torsk. This fish swarms in the seas about the Shetland islands, and forms a considerable article of commerce, either dried or salted, or packed in barrels.

GALLS.—Astringent; used in dying: and the powder, mixed with hogs' lard, enters into the composition of an ointment for the piles. The decoction of galls serves also as a test to detect the presence of iron in malt liquors.—See *Iron, Sulphate of.*

When beer is suspected to contain copperas, or salt of steel, officinally called sulphate of iron, take two wine glasses, and fill them with the suspected beer; place them in a good light, and add a few drops of the decoction of galls, and let it be well stirred and compared with the colour of the beer in the other glass. If the one into which the solution of galls was poured be in the least degree changed, that is, become blacker than the other, it may with certainty be concluded that such beer is impregnated with some chalybeate particles, which will the more evidently appear if the two glasses be examined again after having remained for four and twenty hours undisturbed:—in this case a blackish sediment will be deposited at the bottom of the glass.—See *Gold, Muriate of;* and *Potass, Prussiate of.*

A still nicer test, with the decoction of galls, is to boil down gently a gallon of the suspected beer to a pint, and then, by the addition of the galls, the effects will be more obvious. But if no additional change of colour (blackness) be produced, it is evident the liquor is not adulterated with the salt of steel, or sulphate of iron.—See *New Test Book, by a Practical Chemist*, pp. 18, 19.

GARLICK.—A bulbous root, used as a condiment, possessing the same principles and producing the same effects as onions. "It provokes urine, dissolves the stone in the kidneys and bladder, excites venery, resists certain poisons and pernicious atmospheric influences." *Culpepper.*

It kills worms, and clears the voice; creates an appetite, and consumes the slimy humours in the stomach. If taken in excess it causes pain in the head. It is not recommended for such as are troubled with hæmorrhoids, or to nurses. It agrees in cold weather with old people abounding in gross humours, and whose digestion is faulty. Young people of a hot and bilious constitution ought to abstain from it. It is eaten much in the south of France, Spain and Italy.

GASTRIC JUICE.—This wonderful menstruum, the most active we are acquainted with in nature, is secreted by the capillary arteries that so minutely and numerously intersect the cellular texture of the stomach, and decussate each other in their ramifications. The quantity of gastric juice secreted during digestion is considerable.—MM. Leuret and Lassaigne found, that when the gullet of a horse was tied, so as to prevent the secretions of the mouth and gullet from entering the stomach, a full meal of oats became completely saturated with gastric juice in four or five hours. Mr. Cruikshank supposes the quantity of the fluid thus secreted to be about a pound in every four hours; yet the quantity seems to vary very considerably, according to the demand of the system, or the state of the stomach itself. In carnivorous birds, whose stomachs are called membranous from having little muscularity, and consequently, whose food is turned into chyme principally by the action of the gastric juice, without any collateral assistance or previous mastication, this fluid is secreted in a much larger abundance; as it is also in those persons who labour under that morbid state of the stomach called *canine appetite;* as likewise when, on recovery from a fever, or after long abstinence, the system is reduced to a state of great exhaustion, and a keen sense of hunger induces a desire to devour food voraciously and almost perpetually.

Leuret and Lassaigne, who invariably found the gastric juice to be acid, state its component parts to be

Hydrochlorate of Ammonia,
Chloride of Sodium,
Mucus,
An animal principle soluble in water,
Phosphate of Lime, and
Lactic acid;

and they impugn the accuracy of Dr. Prout's experiments, who concluded the free acid evolved during digestion to be the hydrochloric. On the opposite hand, Tiedemann and Gmelin, observe that, if the contents of the stomach be examined after a long fast, and without any stimulus being applied to its villous membrane, the fluid found in it is a clear, ropy, rather opaque liquid, and nearly or quite destitute of acidity. But if any stimulus, even of the simplest kind, be applied to the inside of the stomach, then the fluid secreted is uniformly acid. Pure gastric juice was best procured by making animals swallow quartz pebbles after a long fast, and killing them in an hour. It was generally greyish-white, ropy, and decidedly acid. When taken from the dog and the horse, it contained some mucus, osmazome, and salivary matter, alkaline sulphates, and hydrochlorates, the alkali being chiefly soda, besides phosphate and muriate of lime, with other salts in minute proportion; and the acidity was owing to the hydrochloric and acetic acids in the dog, and to these conjoined with the butyric acid in the horse.

When the secretion of the gastric juice is elicited by its natural stimulus, food of various kinds, the chymous mass is invariably acid; and Tiedemann and Gmelin further maintain, as the results of their experiments, that its acidity is greatest when the food is most difficult of digestion. In dogs and cats, the greatest acidity was remarked when they were fed with coagulated albumen, fibrin, bones, or gristle; it was less when they took starch, gelatine, potatoes, or rice; and when they were fed with liquid albumen, the alkaline quality of the food was nearly sufficient to neutralize the acidity of the gastric juice. This singular secretion has the peculiar property of coagulating milk, as well as all albuminous substances, which it also as completely dissolves; and hence, the milk thrown up from the stomach of an infant shortly after sucking, is always found in a curdled state. By infusing six or seven grains of the inner coat of the stomach in water, a liquor is produced, which, according to Dr. Fordyce, will coagulate one hundred ounces of milk; or according to Dr. Young, of Edinburgh, 6857 times its weight of milk. But the two grand and characteristic properties of the gastric juice are its astonishing power of counteracting and correcting putrefaction, and of dissolving the toughest and most rigid substances in nature. Of its antiseptic property, abundant proofs may be adduced from every class of animals. Among mankind, and especially in civilized life, food is usually eaten in a state of sweetness and freshness: but fashion and the luxurious desire of having it subacted and mellowed to our hands, tempt us to keep several kinds, as game and venison for instance, as long as we can endure the smell. The wandering hordes of Gipsies, however, and the inhabitants of various savage countries, and especially those about the Orange river in Africa, carry this sort of luxury to a much higher pitch; for they seem to regard a fetor as a perfume, and value their food in proportion as it approaches putrefaction. Now, all these foods, whatever be the degree of their putridity, are equally restored to a state of sweetness by the action of the gastric juice, a short time after they have been introduced into the stomach.

The gastric juice of a dog was made the subject of experiments, by Dr. Fordyce; when it was found, in every instance, that the putrid meat it could be made to swallow was in a very short period deprived of its putrescency. It cannot, therefore, be surprising that crows, vultures, and hyenas, which find a pleasure in tainted flesh, should fatten upon so impure a diet, nor that the dunghill should have its courtiers among insects, as well as the parterre and the flower-garden. The gastric juice has hence been employed as an antiseptic in a variety of cases out of the body. Spallanzani ascertained that the gastric juice of the crow and the dog will preserve veal and mutton perfectly sweet, and without loss of weight, thirty-seven days in winter; whilst the same meats, immersed in water, emit a fetid smell as early as the seventh, and by the thirtieth, are resolved into a state of the most offensive degree of putrefaction. It has also been employed medicinally, in cases of indigestion from a debilitated stomach; and externally, as a check to gangrene, and a stimulus to indolent ulcers.

The gastric juice is equally as remarkable for its solvent as for its antiputrescent property. Pieces of the toughest meat and the hardest bones, enclosed in small perforated tin cases, to guard against all muscular action, were repeatedly thrust by Reaumur and Spallanzani, into the stomach of a buzzard. These meats were uniformly found diminished to three-fourths of their bulk in the space of twenty-four hours, and reduced to slender threads; and the bones were wholly digested either upon the first trial, or after a few repetitions. The gastric juice of a dog dissolves ivory and the enamel of the teeth; that of a hen has been found to dissolve an onyx and diminish a Louis d'or. And it is not many years ago that the handles of several clasp-knives were found half digested, and the blades blunted, in the stomach and intestines of a man who had some time before swallowed these articles out of hardihood, and who ultimately died in one of the London hospitals. A convincing proof of the power of the gastric juice to dissolve substances out of the body, as well as of its great antiseptic property, has lately been recorded.—See *Phil. Trans.*

GELATINE.—A substance soluble in water, but not in alcohol; capable of assuming a well-known elastic or tremulous consistence, by cooling, when the water is not too abundant, and liquifiable again, by increasing its temperature. By the last property it is strikingly distinguished from albumen, which becomes consistent by heat. It is precipitated in an insoluble form by tannin; and it is this action of tannin on gelatine that is the foundation of the art of tanning.* Gelatine exists abundantly in many of the solid parts of the animal body, especially in the skin, cartilages, tendons, membranes, and bones. It is distinguished from all other animal principles by its ready solubility in boiling water, and by the solution forming a bulky, semi-transparent, tremulous jelly as it cools. Its tendency to gelatinize is such, that one part of the gelatine, dissolved in 100 parts of water, becomes solid on cooling. This jelly is a hydrate of gelatine, and contains so much water that by a gentle heat it readily liquifies. On expelling the water by a gentle heat, a brittle mass is left, which retains its solubility in hot water, and may be preserved for any length of time. Jelly, on the contrary, soon becomes acid by keeping. According to Berzelius, gelatine is not contained in any of the healthy animal fluids; and Dr. Bostock, with respect to the blood, has demonstrated the accuracy of this statement. The common gelatine of commerce is the well-known cement, called *glue*, which is prepared by boiling cuttings of parchment, or the skins, ears, and hoofs of animals, and evaporating the solution. Isinglass, the purest variety of gelatine, is prepared from the sounds of the fish of the genus *acipencer*, especially from the sturgeon. The animal jelly of the confectioners is made from the feet of calves, the tendinous and ligamentous parts of which yield a large quantity of gelatine. Jelly is also found in vegetables, in ripe currants, and other berries, mixed with an acid. In a pure state jellies have scarcely any smell or remarkable taste. By distillation they afford an insipid and inodorous phlegm, which easily putrefies. A stronger heat causes them to swell up, become black, and emit a fœtid odour, accompanied with white acrid fumes.

The gelatinous substances of various animals are prepared for the use of sea-faring people, under the name of portable-soup. The whole art of performing this operation consists in boiling the meat, and taking the scum off in the usual manner, until the soup possesses the requisite flavour. It is then suffered to cool, in order that the fat may be separated. It is afterwards mixed with five or six whites of eggs, and slightly boiled. This operation serves to clarify the liquid by the removal of opaque particles, which unite with the white of egg at the time it becomes solid by the heat, and are consequently removed along with it. The liquor is then to be strained through flannel, and evaporated in the water-bath, to

* Gelatine is insoluble in alcohol, but is dissolved readily by most of the diluted acids, which form an excellent solvent for it, also by the liquid alkalies; and the solution is not precipitated by the acids. The best precipitate for it is tannin.—*Henry's Chemistry.*

the consistence of a very thick paste; after which it is spread, rather thin, upon a smooth stone, then cut into cakes, and, lastly, dried in a stove until it becomes brittle. These cakes will keep four or five years, if defended from moisture. When intended to be used, nothing more is required to be done than to dissolve a sufficient quantity in boiling water, which by that simple process is converted into soup for immediate use.

GENTIAN.—A perennial plant, growing in the mountainous parts of Germany, Switzerland, and France. It is sometimes found wild in England. It has an intense and permanent bitter taste, with a slight aromatic flavour, but no smell. It is one of the best stomachics, though so unpleasant from its intense bitterness, that few can be prevailed upon to continue its use. It has but little astringency, and yet it is a good tonic. Its uses are the same as those of bark, in chronic weakness, langour, and particularly in indigestion, being one of the best tonics to the intestines. A scruple of the powder is said to be more efficacious in intermittents, than a drachm of the bark. The compound infusion of gentian, particularly if joined with aromatics, is an excellent preparation. The tincture of gentian is also an elegant form, and the extract is an useful addition to steel, formed into pills, in green-sickness.

Take—Compound infusion of gentian . . . 7½ ounces
Epsom salt . . ½ ounce
Compound tincture of cardamoms . . ½ ounce

Make a mixture—dose, two tablespoonfuls three or four times a day, —*in indigestion*.

GERMAN WINES.—There are excellent wines made in the Imperial dominions; particularly on the banks of the Rhine and Moselle. These wines differ from those of other countries in a peculiar lightness and detersive quality, and are said to be more valuable in some diseases than any medicine. The Rhenish, made at Hochheim, has been styled the prince of German wines. Old, strong, Rhenish wine is called *hock*, or *hockamore*. The German nobility display their magnificence in their wines; and in many houses, as Lady Mary Wortley Montague remarks, the list of them, printed, is put under every plate at their entertainments. Mr. Wraxall, in his Memoirs, (vol. ii. p. 257), has given a copy of one of these papers, which contained thirteen different sorts. The city of Bremen, in Lower Saxony, is noted for its old hock, which is brought from the banks of the Rhine, and deposited in the public cellars, which are wonderfully capacious; though not comparable in magnificence to some in Portugal, or to those of Constantia, at the Cape of Good Hope. There is one particular room, called the Rose, where wine is kept which they state to be 170 years old, and for which one pound five shillings a bottle is asked. The famous Heidelberg tun, constructed in 1343, contained twenty-one pipes. It was rebuilt in 1664, and made to contain 600 hogsheads, English measure. This was emptied and knocked to pieces by the French, in 1688. But a new and larger one was afterwards fabricated, which held 800 hogsheads. It was formerly kept full of the best Rhenish wine, and the electors have given many entertainments on its platform; but this convivial monument of ancient hospitality is now but a "melancholy, unsocial, solitary instance of the extinction of hospitality: it moulders in a damp vault, quite empty. It is nine yards long, seven in diameter, and holds 67,000 gallons; a measure, however, greatly inferior to many of the London porter vats."—*Walker's Lectures on Natural and Experimental Philosophy*.

GINGER, THE ROOT, WHITE AND

BLACK.—They are both the same root; but the white is decorticated, rasped and blanched in the sun. It is the root of a perennial plant growing in the East and West Indies. It has a very biting, pungent taste; but when swallowed it does not produce that glow of heat in the stomach which pepper or cinnamon does; it does not affect the nerves of the stomach in an equal degree, therefore becomes a salutary and useful cordial, as not producing that stimulus which is apt to produce indirect debility. It is carminative, and in flatulencies of the nervous kind nothing is better. For this purpose a cold infusion is best; in the proportion of half an ounce of the fresh powdered root to a pint of water, a wine-glass full for a dose, with the addition of from ten to twenty drops of the tincture of opium, if the complaint be attended with pain.

Ginger is one of the most agreeable and wholesome spices, especially boiled whole in beer, and drank by people moving in the open air, and in cold weather. But this spice as employed by bakers for gingerbread, does a great deal of mischief, especially to the stomachs of children, though it may occasionally be serviceable to travellers, early in the morning, and on an empty stomach. Ginger makes a very fine and rich cordial syrup. The tincture of ginger is a highly useful and cheap tincture, and in hospitals and other places, ought to be substituted for those of cinnamon, lavender, &c. It is useful in dropsy, and in green sickness, combined with steel. It is extensively used in the kitchen.

Ginger expels wind, provokes urine, disperses and attenuates gross humours, increases seed, helps digestion, and creates an appetite. Its too frequent use inflames the humours and makes them very sharp. It agrees in cold weather with aged people, the phlegmatic, and those whose humours are gross and but little in motion, those who digest their victuals with difficulty, and such as are subject to wind. It is injurious to young people of a hot and bilious constitution. When ginger is young and tender, it is cut into slices, and eaten in the East Indies as a salad, prepared with oil and vinegar. In this manner we are prevented from using it, as it does not reach us until after it has been well dried.

GINGER BEER.—A cooling, carminative beverage; and may be made as follows:—

Take Lump sugar	. .	3lb.
Bruised ginger	.	2oz.
Cream of tartar	.	1oz.
Lemon sliced	.	No. 4.
Boiling water	.	4gall.
Yeast	. . . .	8oz.

Work for four days, and bottle.

Ginger Beer in Powders.

Take

Lump sugar, 1 drachm, 2 scruples,
Ginger, in powder, 5 grains,
Prepared natur, 26 grains,
in each *blue* paper; and in each *white* paper, tartaric acid, 30 grains.

GINGER, PRESERVED.—Ginger is preserved as soon as it is dug out of the earth, with sugar. It is first steeped in water to diminish its pungency. In this condition it is of great service at sea, in scurvy and other cases. Preserved ginger ought to be thick, softish, of a good colour, and pleasant taste. Its syrup ought to be white and well boiled. A little bit, about the bigness of a hazel nut, is eaten at a time.

GIZZARD.—The stomach of poultry. Those from white flesh have long been considered, in France, as medicinal. They have been recommended in obstructions of the urinary passages, complaints of the bladder, and nephritic pains; but particularly as a febrifuge. Bouillon Lagrange, a French chemist, considers its principal substance as oxygenated gelatine, with a small quantity of extractive matter.

GLAZE.—A kind of jelly. It is usually made from a reduced *consommé*, or juices from the bottoms of white braized meats. It is directed to be preserved in jelly pots.

GLAZE, (TO FALL TO A).—A term in cookery, used to reduce sauces till they become a jelly, and adhere to the meat.

GLAZE, GLACE, OR ICE.—A composition made of the white of eggs, beaten with powdered sugar.

GLIADINE, (Derived from a Greek word, signifying glue.)—One of the constituents of vegetable gluten. Taddey, an Italian chemist, has lately discovered that the gluten of wheat may be decomposed into two principles, which he has distinguished by the names *gliadine* and *zymome*. They are obtained in a separate state by kneading the fresh gluten in successive portions of alcohol, as long as that liquid continues to become milky when diluted with water. The alcoholic solutions being set aside, gradually deposit a whitish matter, consisting of small filaments of gluten, and become perfectly transparent. Being now left to slow evaporation, the gliadine remains behind, of the consistence of honey, and mixed with a little yellow resinous matter, from which it may be freed by digestion in sulphuric æther, in which gliadine is not sensibly soluble. The portion of the gluten not dissolved by the alcohol is the zymome.—See *Zymome*.

Its properties are, that when dry, it has a straw yellow colour, slightly transparent, and in thin plates, brittle, with a slight odour, similar to that of honey-comb, and when moderately heated, gives out a smell similar to that of roasted apples. In the mouth it becomes adhesive, and has a sweetish and balsamic taste. It is soluble in boiling alcohol, which loses its transparency in proportion as it cools, and then retains only a small quantity in solution; it becomes milky when mixed with water, and is precipitated in white flocks by the alkaline carbonates. It is scarcely affected by the mineral and vegetable acids. Dry gliadine dissolves in caustic alkalies, and in acids. It swells upon red hot coals, and then contracts in the manner of animal substances. It burns with a pretty lively flame, and leaves behind it a light spongy charcoal, difficult to incinerate.

In some respects, gliadine approaches the properties of resins, but differs from them in being insoluble in sulphuric æther. It is very sensibly affected by the infusion of nutgall. It is capable of itself of undergoing a slow fermentation, and excites fermentation in saccharine substances.

GLUE.—An inspinated jelly procured from the parings of hides and other offals, by boiling them in water, straining through a wicker basket, suffering the impurities to subside, and then boiling it a second time. Shreds or parings of vellum, parchment, or white leather, make a clear and almost colourless glue.

GLUTEN.—Gluten is procured by a similar process to that of preparing starch. It is present in most kinds of grain, such as wheat, barley, rye, oats, pease, and beans; but the first contains it in the largest proportion; and this is the reason that wheaten bread is more nutritious than that made with most other kinds of flour. M. Taddey, an Italian chemist, has succeeded in obtaining two distinct principles from gluten, to one of which he has given the name of *Gliadine* from γλα, *gluten*, and to the other that of *Zymome*, ζυμη, a ferment.—*Ann. Philosoph.* vol. xv.

As a separate substance gluten is not so well known as starch, though it is of great importance in nutrition; for, without it, bread could not be made light and spongy. Gluten, when separated from paste by washing, is a ropy, viscid, elastic substance, which may be drawn out to a great length. The nutritive properties of gluten do not rank so high as those of starch, but as it is usually present along with starch, it probably renders the latter more light and easy of digestion. The greatest quantity of it, as already observed, is contained in wheat, which it renders in consequence the best substance from which bread can be made. It is also found in rice, chestnuts, apples, and quinces. Proust (*Journal de Physique*, p. 56) could find no gluten in the potatoe; and hence it is, perhaps, that bread cannot be made from potatoes without the addition of wheat flour, or a large portion of yeast, which Dr. Thompson found to contain gluten. — See *Thompson's Chemistry*, vol. iv.

GLUTEN, ANIMAL.—This substance constitutes the basis of the fibres of all the solid parts.

GLUTEN, VEGETABLE. — If wheat flour be made into a paste, and washed in a large quantity of water, it is separated into three distinct substances. 1. *A mucilaginous saccharine matter*, which is readily dissolved in the liquor, and may be separated from it by evaporation. 2, *Starch*, which is suspended in the fluid, and subsides to the bottom by repose. 3. *Gluten*, which remains in the hand, and is tenacious, very ductile, somewhat elastic, and of a brown grey colour.

The first of these substances does not essentially differ from other saccharine mucilages. The second, namely, the starch, forms a gluey fluid by boiling in water, though it is scarcely, if at all, acted upon by that fluid when cold. Its habitudes and products with the fire, or with nitric acid, are nearly the same as those of gum acid of sugar. It appears to be as much more remote from the saline state than gum, as gum is more remote from that state than sugar.—The gluten, though it existed before the washing, in the pulverulent form, and has acquired its tenacity aud adhesive qualities from the water it has imbibed, is nevertheless totally insoluble in this fluid. It has scarcely any taste. When dry it is semi-transparent, and resembles glue in its colour and appearance. If it be drawn out then, when first obtained, it may be dried by exposure to the air; but if it be exposed to warmth and moisture while wet, it putrefies like an animal substance. The dried gluten, applied to the flame of a candle, crackles, swells, and burns precisely like a piece of horn or a feather; and affords the same products by destructive distillation as animal matters do. It is not soluble in alcohol, oils, or æthers, and is acted upon by acids and alkalies when heated. According to Rouelle, a French chemist, it is the same with the caseous substance of milk.—See *Gliadine, Zymome.*

From the flour of barley, rye, or oats, no gluten can be extracted, or from that of wheat, probably because they contain too small a quantity.

GLUTTONY. — Excess in eating is reckoned more injurious to the health and constitution, than excess in drinking. By eating to a surfeit the stomach is loaded and oppressed to its utmost extent; and by filling it with food of an opposite kind, the most distressing consequences are apt to ensue. All the fine vessels and tubes of which the human frame is composed, are choaked as it were, and over-loaded; all the exquisite and delicately fine canals, which the hand of Nature has formed and disposed in our most astonishing fabric, are overburthened and retarded; and the circulation of the blood becomes more turbid and slow, the consequence of this violence done to nature. That Nature resents every outrage committed on her treasures, and seldom fails to punish the transgressors with lingering disease, or early dissolution, is an observation that may be applied to the moral and physical, as well as to the corporeal faculties of man. Nature's real wants are few; and these are satisfied with few things. If man would but regulate his mode of living by nature, and obey her dictates and calls, as the rule and standard of eating and drinking, one-third of the diseases with which mankind from the cradle is visited, would be unknown or hardly felt. The stomach was never intended to be the receptacle of all the discordant variety which a luxurious and depraved appetite can crave, or, in other words, to be a putrid sepulchre for all impurity and horror: the principles of so many heterogeneous things as have been swallowed, fermenting and filling the exquisite structure of the human frame, with a troop of diseases and evils. What an unnatural rebellion is this against the wise and good constitution of nature! What a dreadful state of mind must that be—a miserable state, in which thousands of wretched and contemptible creatures now are, to be ransacking nature for delicacies, plundering earth, sea, and skies, to furnish them with the miserable means of gratifying appetite; studying from day to day, what they shall eat, how they shall contrive to diversify their meals, with the ravenousness of a beast, devouring every thing their imagination can form, or their wealth purchase—whose god is their belly, and whose glory is their shame; knowing no pleasure and desirous of none, but what arises from sensual indulgencies, and the lowest voluptuousness and epicurism."—*Burton's Anat. of Melancholy.*

It has been often remarked, that a hospitable and splendid table is highly commendable among the opulent; it indicates a greatness of mind, a becoming liberality of nature, and serves the cause of the poor and needy; but when feasting degenerates into excessive luxury, gluttony, and insupportable expense, the authors never fail to bring down upon them the charges of prodigality and folly, and, their inseparable companion—disease. To this kind of excess some of the ancient Romans were notoriously addicted, as appears from the following facts. When the servants of Lucullus, a famous Roman commander, were apprised of the apartment in which he designed to sup, they regulated the order, quantity, quality, and expense of the banquet accordingly. The charges of an accidental entertainment, made by him for Cicero and Pompey, because ordered in the *Apollo,* amounted to the enormous sum of 50,000 drachms—hence, *to dine or sup in the Apollo,* has become a sort of proverbial phrase to denote a superb entertainment, or an immoderately expensive meal. Very different was the conduct of Socrates. Though the table of this eminent man was only supplied with simple fare, he did not scruple to invite those of superior rank to partake of his meals. When his wife, upon some such occasion, expressed her dissatisfaction at being no better provided, he desired her to give herself no concern; for if his guests were wise men, they would be content with whatever they found at his table—if otherwise, they would be unworthy of his notice. Whilst others, said he, live to eat, *wise men eat to live.* He found by experience, that temperance is the parent of health. It was owing to his perfect regularity in this respect, that he escaped infection in the midst of the plague, which proved so fatal to his fellow citizens. It is recorded also of Hannibal, the Carthagenian general, that he took sustenance merely to content nature, not to delight his appetite. The supplies of the table of Zeno, the founder of the sect of the Stoics, consisted only of figs, bread, and honey, notwithstanding which he was frequently honoured with the company of great men. His dress also was plain, and all his expenses frugal.

"In what state, it may be asked, are the minds and understandings of sensualists and epicures, compared with that serenity and complacency of soul which distinguish the mild and temperate liver? they are despicable —nay, contemptible in the lowest degree. Their reason lies buried under an incumbent load of surfeiting and gluttony; their understandings are totally eclipsed by the dark, gross shadow of intervening sense, and all their mental and intellectual powers are miserable, weak, and puny. And as the mind of the epicure and the sensualist, habitually overcharged with surfeiting and luxury, is in this despicable state with regard to its understanding, so the body most miserably suffers. The weight of excess soon breaks the strings of this exquisite instrument. All is discord. The body languishes, while appetite not unfrequently rages; and gout, palsy, asthma, consumption, or apoplexy, frequently terminate what excess began.—*Burton.*

Mankind, in general, since the improvement in cookery, eat, says Dr. Franklin, about twice as much as nature requires. Suppers are not bad if we have not dined; but restless nights naturally follow hearty suppers after full dinners. Indeed, as there is a difference in the constitutions, some rest well after these meals: it costs them only a frightful dream and an apoplexy, after which they sleep till doomsday. Nothing, continues the doctor, is more common in the newspapers, than instances of people, who, after eating a hearty supper, are found dead in bed in the morning. "I avoid," said Mr. Pennant, "the meal of excess— a supper; and my soul rises with vigour to its employs; and I trust, (he adds) does not disappoint the end of its Creator." "The sleep of the labouring man is sweet, whether he eat little or much; but the abundance of the rich will not suffer him to sleep."—*Ecclesiasticus* v. 12.

Couch'd on his straw, and fancy-free,
He sleeps like careless infancy.—Scott.

The best food for a man to live upon is that which is simple and nourishing, without acrimony; and the principal rule to be observed with regard to food in general, is to eat and drink wholesome things in a proper quantity. As relates to quantity, the rule is, to take just such a proportion as will be sufficient to support and nourish him, but not so much as will overload the stomach, and render digestion difficult. Yet, in this measure also, every individual has a sure guide, if he will be directed by a natural and not by a depraved appetite; for whenever he may have eaten of any good food, to the extent required by his appetite, and leaves off before his stomach is cloyed, or finishes his meal with some relish for more, he has eaten a proper quantity. The quantity, indeed, as well as the solidity of a man's aliment ought to bear a just proportion to the strength of his constitution, and to the exercise he uses; for young, strong, labouring people will turn to good chyle any kind of common food in use; and they can digest with ease a quantity that would oppress or destroy the delicate or sedentary; and great care should be observed in not indulging too freely in a discordant variety of aliments at the same meal. But that a man may not be deceived, and that he may be satisfied that he has committed no excess,— if immediately after dinner he can write, or walk, or go about his ordinary or any other business with pleasure; if after a supper his sleep be neither disturbed nor diminished by what he has eaten or drunk; and if he has no head-ache the next morning, nor any uncommon hawking or spitting, or a bad taste in his mouth, but rises at his usual hour, refreshed and cheerful, he may then justly conclude that his diet has been well regulated, and that he has not exceeded, either in eating or drinking, the bounds of temperance.

GNATSNAPPER. — A tender and plump bird, which is remarkably fond of figs; hence the name, *Ficedula,* given to it by the Romans. It has also been called *Avis Cypriæ* (the bird of Cypria), because, in all probability, that island abounded with them; or that many were formerly pickled out of this island, and shipped for Europe. It usually frequents places where figs and grapes abound. Its feathers change their colour in autumn. It has a curious and delicious taste, and is served up to the best tables. Pisanellus says this bird never overburdens a man's stomach; but that, on the contrary, it fortifies, whatever quantity may be eaten of them. The same author also adds, that he had known some who having eaten a great many of them, spent the whole day very merrily; from whence it is concluded that this food supplied them with spirits enough, with pure humours, and but little dull and gross substances. Indeed, as the gnatsnapper is very tender and delicious, has exercise enough for the enjoying of a free transpiration, feeds upon good food, and contains many exalted principles, it will be no difficult matter for us to comprehend how this bird can produce the good effects that have been attributed to it.

GOAT.—The flesh of goats is hard, indigestible, and unwholesome; hence the meat of kids only is esculent, being more easily digested, and yielding a good nourishment.

The goat, which is the female, is not much used for food, at least unless very young; for otherwise the flesh becomes hard, and not easy of digestion; and on this account Hippocrates did not approve of its use. Aristotle and Plutarch assure us that goats are almost always sick; and that they are subject to a kind of epilepsy, which they impart to those that eat their flesh. Others say that they have observed them never to be free from fever; there are some authors, nevertheless, who maintain that goat's flesh digests easily in the stomach, is very nourishing, and wonderfully recovers decayed strength. It is said that a certain wrestler of Thebes anciently accustomed himself to live upon goat's flesh, and that he excelled all others of his time in strength.

A goat usually lives eight years; some a few years longer. It is said that the olive tree becomes barren if they lick it ever so little, and that this was the reason why the Pagans would never sacrifice a goat to Minerva. It is also said, but with what degree of truth we cannot speak of our own knowledge, that goats run mad if they eat sweet basil; and that it kills them to drink of the water in which the leaves of rose-laurel have been steeped for some time. The latter assertion may more readily be credited than the first, from the well known fact of the laurel in all probability giving out prussic acid in infusion.

Goats live willingly among sheep; and Plutarch says the tiger has so great an affection for goats, that if one be brought to him in the greatest extremity of hunger, he will not touch it. The fat and marrow of the he-goat are of an emollient and dissolvent nature, and reputed good for strengthening the nerves. A mixture of the gall of a goat, with bread, the whites of eggs, and oil of laurel, made into a cataplasm, and applied to the navel, was formerly considered as a specific in quotidian ague.

GOAT'S-BEARD (*Tragapogon*).—An esculent herb. The root is excellent, even in salad, and it is nutritive, and medicinally pectoral.

GODIVEAU.—In cookery, a common veal forcemeat.

GOLD, MURIATE OF.—Used as a test for the proto-salts of iron. A solution of the muriate of gold has been strongly recommended by Professor Ficinus, of Dresden, as the most delicate of all tests for the presence of the protoxide of iron, surpassing even considerably the gall nut. It requires the presence of the carbonate of soda, which, in some analyses, may interfere with its use. A grain of green vitriol, with an equal quantity of soda, dissolved in four parts of water, produces, with a drop of the solution of the muriate of gold, a strong precipitate, which gradually assumes a purple colour. Without the soda the effect did not appear in less than three days. M. Ficinus thinks the process may be improved, even to the determination of the quantity of the protoxide of iron present.—*Journal of Science.*

GOOSE. — "A Michaelmas goose," says Dr. Kitchener, "is as famous in the mouths of the million, as the minced pie at Christmas; but for those who eat with delicacy, it is at that time too full grown. The true period when the goose is in the highest perfection, is when it has just acquired its full growth, and not begun to harden. If the *March* goose is insipid, the *Michaelmas* goose is rank; the fine time is between both; from the second week in June to the first in September: the leg is not the most tender part of the goose."—*Cook's Oracle*, p. 168.

Geese are called *green* till they are about four months old. The only difference between roasting these and a full grown goose, consists in seasoning it with pepper and salt instead of sage and onion, and roasting it for forty or fifty minutes only.— See *Poultry.*

The famous Strasburgh pies, which sell for a most enormous price, are made with the livers of geese that have been precociously fattened, by cramming them with meat, depriving them of drink, and keeping them constantly before a hot fire.

GOOSEBERRIES *(Ribes).* — These, having less acid than either raisins or currants, are perhaps more wholesome, especially if their skin and other impurities are not swallowed together with the juice. When used in a green state, for sauces and pies, they are cooling and refreshing; and when ripe possess similar properties with cherries. — See *Currants.*

GOURDS *(Cucurbita).*—A fruit of the melon kind, but less sweet, and of a much larger size: if boiled in milk, after the first water has been poured off, and with the addition of salt and pepper, they afford sufficiently wholesome and nutritious food.—See *Melon.*

GRAINS OF PARADISE.— An aromatic seed, very hot taste, and pungent like pepper. Used to give a false strength to wine, beer, and other liquors.

GRANADILLA, or LITTLE POMEGRANATE. — This name is applied to the edible fruit of five species of the Passiflora genus (*Monadelph. Pentand. L. and Passifloræ J.*), the common character of which is that of climbing herbaceous plants, woody at bottom, generally with lobed leaves, and all natives of warm climates.

1. The granadilla vine of the French.

2. The apple-fruited granadilla, or sweet calabash.

3. The laurel-leaved granadilla, or water lemon.

4. The purple-leaved granadilla.

5. The flesh-coloured granadilla, or May apple.

GRAPES.—The fruit of the vine (*vitis*), of which there are various kinds.—Like strawberries, grapes are excellent fruit. They are uncommonly resolvent, laxative without debilitating, and promote all the natural evacuations; but at the same time, they are in a high degree flatulent. The quality of grapes depends much on climate and soil. Only those of a sweet taste and aromatic flavour ought to be used. They agree best when eaten on an empty stomach, with a small quantity of bread. Besides their slightly nourishing quality, it is said they cool the blood and animate the nerves.—(See *Strawberries*). Their too frequent use causes the colic, generates wind, and attacks the spleen, producing considerable uneasiness and pain. Young foxes are remarked to grow very fat in autumn, in those places where there are vines; and their flesh at this time is tender and delicate. But when the vintage is over, these animals become lean, and their flesh loses the good savour it had acquired before. There are also many other animals who grow fat in grape time, which shews that this fruit is very nourishing.

Grapes are dried in the sun and oven, in order to preserve them. The large ones were named Damascenes, and the smaller ones Corinths. Dry grapes are more wholesome than others, being divested of the tenacious phlegm they before possessed. Green grapes are preserved to make them more pleasant, and that they may keep the longer. They are cooling and moistening. With the juice of green grapes, water and sugar, a cooling beverage is made, which is a pleasant drink during excessive heat. Grapes, full and ripe, agree with every constitution, provided they be not used in excess. Old people, however, ought to use them abstemiously, for they weaken them too much, and increase the defluxions which their age too frequently subjects them to.

GRAS, (AU).—*Au gras*, implying in cookery, that the article specified is dressed with meat gravy.

GRATIN.—A layer of some particular article spread over a silver or any other dish that will bear the fire, and placed on a stove or hot ashes until it burns to it.—*Dolby*.

GRAVY.—The juice of the muscular parts of animals. When, for instance, the muscular part of meat is gradually exposed to a very moderate degree of heat, sufficient to brown the outer fibres, the gelatine, osmazome, and other animal juices of it, become disengaged and separated in a liquid state, and constitute a fluid of brown colour, possessing a highly savoury and grateful taste. Hence gravy is the soluble constituent or liquid part of meat, which spontaneously exudes from animal flesh, when gradually exposed to a continued heat sufficient to corrugate the animal fibre. Flavouring vegetables or aromatic spices are often added and fried with the meat, such as shred onions, carrots, celery, till they are tender, together with some spices and the usual condiments. To extract gravy the meat is cut into thin slices, or it is scored, and the fibres are bruized with a mallet. It is then usually seasoned with pepper and salt, and exposed in a pan containing a small quantity of butter, or other fat, or, in fine, without any fat, to the action of a gradual heat, just sufficient to brown the outer fibre strongly. The juices of the meat which are thus copiously disengaged during the process of frying, are suffered to remain exposed to the action of heat till they have assumed the substance of thin cream, and a brown colour. A small quantity of water is then added, to re-dissolve the extracted substance, and after the whole has been suffered to simmer with the spices and roots for a short time, together with an additional quantity of water, the liquid is strained through a sieve. — See *Browning*.

If the gravy be intended for made dishes, it is customary to give it the consistence of cream by means of thickening paste.—(See *Paste*). The meat is capable of furnishing an additional quantity of gravy. It is therefore covered with water and suffered to simmer for about an hour, or till the fluid is reduced to one-half its bulk. One pound and a quarter of lean beef, or one pound and a half of veal, will produce one pint of strong gravy.

GRUEL.—A common article of diet for the infirm or sick, made from oatmeal or groats, in which state, as well as in the former, they yield to water, by coction, the fecula they contain, and form a nutritious gruel, which has also the property of being slightly aperient. It should never be kept longer than forty-eight hours, as it becomes ascescent after that period. Gruel may be made of different degrees of consistence, according to the intention of its use. If it be used as a demulcent drink, it ought to be thin; and may be made by mixing well and gradually together, in a basin, a table spoonful of oatmeal with three of cold water, and then adding carefully a pint of boiling water, which is to be boiled for five minutes, stirring it all the time, to prevent the oatmeal from burning at the bottom of the pan; it is, when sufficiently boiled, to be strained through a hair sieve, to separate the undissolved parts of the meal from the gruel. If a more substantial repast is required, double the above quantity of oatmeal must be treated in a similar way. To increase the nutritive quality of this aliment, broth or milk may be substituted for water. Some are in the habit of introducing a bit of butter into gruel; though the propriety of the addition is questionable, where the stomach is disposed to generate acidity.

Dr. Kitchener's receipt to make gruel is as follows: "Ask those who are to eat it if they like it thick or thin; if the latter, mix well together by degrees, in a pint basin, one table spoonful of oatmeal with three of cold water; if the former, use two spoonsful. Have ready a stew pan, a pint of boiling water or milk, put this by degrees to the oatmeal you have mixed, return it into the stew pan, set it on the fire, and let it boil for five minutes, stirring it all the time to prevent the oatmeal from burning at the bottom of the stew pan; skim and strain it through a hair sieve. To convert this into caudle, add a little ale, wine, or brandy, with sugar; and if the bowels are disordered, a little nutmeg or ginger grated.

GREEK WINES.—The Greek or Turkey wines, so denominated, come from Candia, Chios, Lesbos, Tenedos, and other islands of the Archipelago, which anciently belonged to the Greeks, and which are now chiefly again in their possession. Chio, now Scio, is one of the most beautiful and pleasant islands in the Archipelago: it is situated south of Mytilene, the ancient Lesbos. Its vineyards still form the principal riches of the island, and the wines maintain their reputation; and having been immortalized by the "Mantuan Bard," yet "taste sweet in song."

"Two goblets will I crown with sparkling wine,
The generous vintage of the Chian vine;
These will I pour to thee, and make the nectar thine."

DRYDEN.

GROATS.—Oats deprived of the husk, and rough ground, or broken.

GROUT.—An ancient dish, of which our ancestors were very fond; imported, in all probability, by the Danes, or Saxons; and composed of meat or pollard—a proof of the simplicity of their fare.

"A king, Hardicanute, 'midst Danes and Saxons stout,
Carous'd on rich brown ale, and din'd on grout."

GUDGEON.—There are two sorts of gudgeons—namely, the sea and the fresh-water gudgeon; the first is divided into two other, of which the one is white and the other black: they have both a good taste, though the preference is given to the white. Both the sea and river gudgeon ought to be well fed; and those that have been bred in clear and running waters are the best. It is easily digested.

Though of a good taste, the sea gudgeon is little used, although it has been recommended to convalescents. The river one is not much valued; it is about the length and thickness of one's thumb, and full of small scales, and lives chiefly at the bottom, among the mud—hence, by some Latin authors, called *fundulus:* it feeds upon weeds, moss, and small leeches that are in the lakes. It is also said not to be sparing of men's bodies that have been drowned.

GUAVA, (The white guava is the *Psidium pyriferum*, L.)—A West Indian tree, growing to the height of seven, eight, or twelve feet, with numerous branches, and blunt, entire, smooth leaves, two or three inches long; the flowers are in solitary peduncles and sweet smelling; fruit bigger than a hen's egg, roundish or oblong, smooth, yellow; pulp firm, full of bony seeds, flesh-coloured, sweet, aromatic, and pleasant. It is eaten with avidity, both by West Indians and Europeans, raw in the dessert, and preserved with sugar. It has grown here as a stone plant since 1566; it is propagated by seeds from ripe fruits brought over. The red guava (*P. Pomiferum*, L.) has a beautiful fruit crowned like a pomegranate; but it is not so agreeable to eat as the other. Cattley's guava (*P. Cattleianum*) is a new species, introduced from China by Messrs. Barr and Brooks, nurserymen, and fruited by W. Cattley, F. H. S., in 1820. The plant resembles the other species in general habit and appearance, but the fruit is larger, nearly spherical, of a fine deep claret colour, growing in the axilla of the leaves. The skin has much the consistence of that of a ripe fig, but is thinner. The interior is a soft fleshy pulp, purplish-red next the skin, but becoming paler towards the middle, and at the centre it is quite white. It is juicy, and in consistence is much like a strawberry, to which it bears some resemblance in flavour.—*Hort. Trans.* iv. pl. xi. 317.

GURNET.—The flesh of the red and grey gurnets is firm and solid; and yields a tolerably good nourishment, and not so watery as many other kinds of fish.

GUM.—The best known example of gum, is gum arabic, which exudes spontaneously from several shrubs in warm climates. Pure gum is without colour, but it is most usually found tinged with other vegetable juices. The distinction between this and mucilage is, in a dietetic point of view, of very little moment. The experiments of M. Magendie, would lead us to believe that gum is not nutritive; but we have facts no less decisive that it is. Bruce (*Travels*, vol. iii.), tells us, that the caravans from Abyssinia to Cairo, when their provisions are exhausted, frequently live for days together on gum arabic. The Moors also of Lybia and Senegal use it for food. Linnæus gives one instance, of more than a hundred men who lived wholly upon it during a siege of two months. But, notwithstanding these facts in favour of gum, it must be allowed only a slightly nutritive property. — Mucilage is much a kin to gum, and is more abundant in the ordinary vegetables brought to our tables—such as carrots, parsnips, beet, turnips, asparagus, spinage, lettuce, artichokes, cucumbers, and green peas, *which see.*

H.

HADDOCK.—The haddock, as regards nourishment, is similar to the cod-fish, with the exception that it is easier of digestion, and less firm in substance.—See *Gadus Æglefinus.*

HAGGIS.—A celebrated Scots' dish. The haggis-bag is the paunch of a sheep. The following directions for making this "chieftain o' the pudding race," are given by Mrs. Maciver, in her Cookery Book, published at Edinburgh, A.D. 1787.

"Make the haggis-bag perfectly clean: parboil the draught; boil the liver very well, so as it will grate; dry the meal before the fire; mince the draught and a pretty large piece of beef very small; grate about half of the liver; mince plenty of the suet and some of the onions small; mix all these materials very well together, with a handful or two of the dried meal; spread them on the table, and season them properly with salt and mixed spices; take any of the scraps of beef that are left from mincing, and some of the water that boiled the draught, and make about a chophin (i. e. a quart) of good stock of it; then put all the haggis meat into the bag, and that broth in it; then sew up the bag; but be sure to put out all the wind before you sew it quite close. If you think the bag is thin, you may put it in a cloth. If it is a large haggis, it will take at least two hours boiling."

In haggis of a plainer kind, oatmeal, suet, and onions, compose the chief ingredients.

HALLIBUT.—The hallibut, called *Umbra Marina,* is in great request at the tables of the great. The flesh is firm and white, and is considered to be little inferior to the sturgeon. It is a good and wholesome fish; agrees well with a weak stomach: it is rather a large fish, and is held in great estimation in Italy.

HAMS.—Smoked hams are a very strong food. If eaten at a proper time, they are a wholesome stimulus to the stomach; but boiling renders their digestion still more difficult. They should, indeed, to preserve their flavour, rather simmer than boil—the difference between a ham slowly boiled or simmered, and one submitted to the action of a fierce fire, is almost incredible.

In salting any kind of meat, much of its jelly is washed away, the fibres become stiff, and thus rendered heavier for the stomach. The salt penetrates into the jelly itself, prevents its solution in the alimentary canal, and consequently makes it less conducive to nutrition.

By *smoking,* the fibres of meat are covered with an incrustation, the jelly is half burnt, the heat of the chimney occasions the salt to concentrate, and the fat between the muscles to become rancid; so that such meat, although it may stimulate the palate of an epicure, cannot be wholesome. Much depends on the manner in which hams are cured.

1. To Cure Hams.—Cut the hams from the pig, and rub them well with an ounce of saltpetre, half an ounce of sal prunella, and a pound of common salt. Lay them in salt pans for ten days; turn them once during this time, and rub them well with more common salt. Let them lie ten days longer, and turn them every day. Then take them out, scrape them as clean as possible, and dry them well with a clean cloth. Then rub them slightly over with a little salt, and hang them up to dry, but not in too hot a place.

2. Another method.—Take a fat hind-quarter of pork, and out off a fine ham—Then

Take—	Saltpetre . .	2 ounces
	Coarse salt .	1 pound
	Common salt	1 pound
	Sal prunella .	2 ounces.

Mix these ingredients well together, and with them let the pork be well rubbed, turning and basting it every day. Then hang it in a wood smoke in a dry place, so that no heat can get at it. If you intend to keep your hams long, hang them a month or two in a damp place, taking care that they do not become mouldy, and it will make them cut fine and short.

Hams thus prepared must not be laid in water till they are about to be boiled for use, which ought to be done in a copper, or in the largest pot you have. Put them in when the water is cold, and do not let the water boil till they have been in four or five hours. Skim the copper or pot well and frequently till the water boils. If it be a very large ham, it will take three hours' boiling; but a small one will be done in two hours, provided the water be not suffered to boil too soon. Take it up half an hour before dinner; pull off the skin, and throw raspings finely sifted all over it. Hold a red-hot fire shovel over, and when dinner is ready, take a few raspings in a sieve, and sift them all over the dish. Be sure your ham is boiled in as much water as possible, and to keep skimming it till it boils. It must be at least four hours, if your ham is of any size, before you suffer it to boil.

3. To Cure Hams the Yorkshire way.—Yorkshire is famous for hams, and the reason is, that their salt is much finer than the London, it being a large clear salt, and gives the meat a fine flavour. A deep hollow wooden tray is better than a pan, because the pickle swells about it. When you broil any of these or the following hams in slices, let the slices lie a minute or two in boiling water, and then put them on the gridiron. By this method you will take out the salt, and make them eat with a fine flavour.

In curing hams in Yorkshire, they first well beat them; then mix together

Salt, *half* a peck,
Saltpetre, *three* ounces,
Sal-prunella, *half* an ounce,
Common salt, *five* pounds.

With this composition the hams are well rubbed, and what remains is laid on the top of them. They are now suffered to lie in this manner for three days, and then hung up. As much water is then added to the pickle as will cover the hams, and salt added till it will bear the weight of an egg, and then it is boiled and strained. The next morning the hams are put into this pickle, and pressed down in it, that they may be covered. Let them be a fortnight in the pickle; then take them out, rub them well with bran, and dry them.

The above ingredients are enough for three middling-sized hams.

4. To Cure Two Hams the Westmoreland way. — Rub the hams the preceding evening with ten ounces of saltpetre; and the following morning take three pounds of common salt, three pounds of the coarsest sugar, and one pound of bay salt. Boil these in three quarts of strong beer, and when it has boiled a short time, pour it over the hams. Let them lie a month in this pickle, rubbing and turning them every day, but do not take them out of the pan.

The same pickle is good for tongues and sauces. Before the hams be smoked, rub a handful of bran over them, to suck up the moisture, and let them hang three weeks or a month.

5. To make Beef Hams.—Take the leg of a fat Scotch or Welch ox, and cut it like a ham. Take an ounce of bay salt, a pound of common salt, and a pound of coarse sugar, which will be a sufficient quantity for a ham weighing about fourteen or fifteen pounds; and if there be a greater or less quantity of meat, let the ingredients be mixed in proportion, with which rub the meat and turn it every day and baste it well with the pickle daily for a month. Then hang it up

in wood smoke, where there is but little fire and a constant smoke, for a month. Then take it down and hang it in a dry but not hot place, and keep it for use.

You may either cut a piece off as you have occasion, and boil it, or cut it into rashers and broil it, with poached eggs; or boil a piece; it eats very well cold, and will shive like Dutch beef.

6. New England Hams, to Cure.—For two hams, take two ounces of sal prunella; beat it fine, rub it in well, and let them be twenty-four hours. Then take half a pound of bay salt, a quarter of a pound of brown or rock salt, a quarter of a pound of common salt, and one ounce of saltpetre, all beaten fine with half a pound of the coarsest sugar. Rub these ingredients well in, and let them lie two or three days. Then take white common salt, and make a pretty strong brine with about two gallons of water, and half a pound of brown sugar. Boil it well and skim it when cold. Then put in the hams and turn them every two or three days in the pickle for three weeks. Then hang them up in a chimney and smoke them well a day or two with horse litter. Let them afterwards hang about a week on the side of the kitchen chimney, and then take them down. Keep them dry in a box, with bran covered over them. They may be eaten in a month, or will keep very well for one year.

7. Westphalia Ham.—Rub the piece intended for a ham with half a pound of the coarsest sugar, and let it be till night. Then rub it with an ounce of saltpetre finely beaten, and a pound of common salt. Let it lie three weeks, turning it every day. Dry it in a wood smoke, or where turf is burnt. When you boil it, put into the pot or copper a pint of oak saw-dust.—See *Drysalting.*

8. Mutton Hams.—Cut a hind quarter of mutton like a ham, and rub it well with an ounce of saltpetre, a pound of coarse sugar, and a pound of common salt well mixed together. Lay it in a hollow tray with the skin downward, and baste it every day for a fortnight. Then roll it in some sawdust, and hang it in wood smoke for a fortnight. Then boil it, and hang it in a dry place. Cut it out in slices and broil them as wanted, and they will eat very fine.

9. Veal Hams.—Cut off a leg of veal in the shape of a ham. Take a pint of bay salt, two ounces of saltpetre, and a pound of common salt. Mix them all together, with an ounce of beaten juniper berries, and rub the ham well with them. Lay it in a hollow tray with the skinny side downwards, and baste it daily with the pickle for a fortnight, and then hang it in a wood smoke for a fortnight longer.—See *Drysalting;* also,

Bacon, to prepare.
Bacon, Westphalia.
Beef, hung.
Beef, Dutch.
Herring and *Salmon*, to cure.
Pork, to pickle.
Sausages, Bologna, &c.
Tongues, to cure.

HARES.—The flesh of hares was in such great esteem with the ancients, that they gave it the pre-eminence over all other kinds of animal food. Martial says,

Inter quadrupedes gloria prima lepus.

The poet knew but little of diet; for the flesh of the hare is hard, and is neither good nor wholesome nourishment. The youngest and fattest are the best. They differ much in colour; some are blueish, others brown, and some again of a yellow blue colour. And in the northern parts of Europe, and on the mountains of the Alps, there are some hares white. They differ also in respect to the places where they live, as on mountains or plains, and others again in moist and marshy places; and in these different places some are fatter and larger than others, according to their supply of food. They differ also in smell. Those which live in moist places are not near so good food as those that are bred on plains and mountains, the latter feeding on aromatic herbs that give their flesh a fine flavour. A hare is also better in winter than in summer, because the cold mellows their flesh and makes it tender, the same being naturally a little hard and close.

It has been said that the frequent eating of hare gives people a fine vermilion complexion, and several parts of this animal were formerly used in physic, which at present are not held in estimation, and which it would be superfluous to refer to.

HATELETS, the same as ATTELETS; *i. e.* small silver skewers.

HEADING STUFF, or FININGS.—Alum and green vitriol, equal parts. Used to give the cauliflower head to beer.—See *Finings*.

When malt liquors contain a proper degree of viscidity (which a due proportion of malt and a well-conducted fermentation never fail to communicate), and when poured from one vessel into another, they always accumulate on their surface a close creamy foam, called a *cauliflower head;* so that when blown a-side it immediately closes in again. This ought more particularly to be one of the characteristics of good porter. The brewer, however, for reasons best known to himself, does not always give his drink such a body as would enable it spontaneously to carry this close foamy head. When first tapped in the victualler's cellar it may do so, but when the cask comes to be about half empty, the poverty of the drink becomes apparent, and when drawn it no longer discovers this desirable effect. To conceal this defect, the publicans are supplied by itinerant vendors with what is termed "heading stuff," composed of isinglass in solution with sourish porter, whisked with a twig, until it turns to a froth. A spoonful of this is laid on the surface.

One method of detecting this artificial heading, is by blowing on it, and separating it on the surface, and if it do not immediately close in again the artifice is detected. But in order to defeat this mode of discovery, the brewer has devised a process equally as successful, but of a more pernicious tendency to the constitution of the drinker; and which, though prohibited by law, has long been carried on with equal effrontery and impunity; and this is done by means of green vitriol (see *Sulphate of Iron*), well known as the general panacea for beer. "A quantity of this nauseous styptic, from one to six ounces, is previously dissolved in milk or beer, then mixed up with a solution of isinglass, and thus added to one butt of beer. When by this means it is rendered fine, and drawn, the head, or froth, will rise three or four inches above the pot, and will remain so for a length of time. The populace here fall into the same error as in the choice of their bread—for they prefer none that is not white, nor drink any beer but what when drawn carries a head like a cauliflower; and there are few licensed victuallers who do not understand this method of obliging their customers."

Alum possesses nearly the same property as the green vitriol. Salt of steel (*Sulphate of Iron*), differs very little from purified green vitriol. Alum consists of a chalky earth united to vitriolic acid, as copperas or green vitriol does, hence they only differ in their bases as regards their composition; though the last is infinitely more nauseous and deleterious, especially when drank in beer; as here it is not decomposed like alum in bread, before it is taken internally, but every particle of beer is united to a particle of vitriol, and thus it is taken into the stomach in a state of solution in a pure state. Salt of steel, indeed, may be an excellent medicine; but taken thus daily into the stomach, it is not difficult to conceive by what means it may produce very acute and dangerous diseases. It may, however, be observed, that when porter is well brewed from good malt, and a proper proportion of hops, there will be no occasion to head, fine, or otherwise modify or disguise it.—See *Malt Liquors.*

HEALTH. — An assemblage of all the secretions of the human body in a state of activity, and existing in harmony and equilibrium. — See *Secretion.*

To maintain that desirable state of life, (which is defined as an assemblage of all the functions), called health, a proper preparation of the fluids is requisite; the solids duly formed of these fluids; the invigorating influence of the vital powers; and last, though not least, *mens sana in corpore sano,* — that is, a sound mind in a healthy body. See *Dietetics.*

The cause of the diversity of temperaments, on which conditions of health are much affected, are very numerous; among such may be reckoned, hereditary disposition, habit of body, climate, diet; not unfrequently religion, mode of life, and luxury. Besides the variety of constitutions to which men are subject from these incidents, circumstances peculiar to every individual influence the number as well as the energy and vigour of the functions. As regards age, the health of a new born infant is different from that of an adult: in regard to sex, it differs in a marriageable virgin and an old woman past child bearing, during menstruation and suckling; and in regard to mode of life, it is as different as the barbarous tribes of North America. The more functions flourish simultaneously, in the body, the more considerable is its life, and *vice versa.* Hence life is greatest when the functions have attained their highest state of perfection in adult age; and least, when the functions, although very perfect, are fewer and more sluggish, namely, in the newly conceived embryo: life is also less vigorous during the opposite state. —*Blumenbach's Physiol.*

To secure health by the golden mean is the true medium, so beautifully described by Milton, in his Paradise Lost, that we cannot resist quoting it here: — when he introduces the angel Michael giving directions to our first parents by what means they might preserve health, he says,

———— " If you well observe
The rule of not *too much,* by temperance taught,
In what thou eat'st and drink'st, seeking from thence
Due nourishment, not gluttonous delight,
Till many years over thy head return:
So may'st thou live, till, like ripe fruit, thou drop
Into thy mother's lap, or be with ease
Gather'd, not harshly pluck'd, in death mature."

The whole art, in fact, of preserving health, may be properly enough said to consist in filling up what is deficient, and carrying off what is redundant or superfluous, in order that the body may be habitually kept in its natural state; and hence it follows, that all the supplies from eating and drinking, and all the discharges by perspiration, and by the other channels and distributions of nature, should be regulated in such a manner, that the body shall not be oppressed with repletion, nor exhausted by evacuation. Of these two, one is the cure or antidote of the other,—every error in repletion being corrected by a seasonable and congruous evacuation; and every excess in evacuation, should it not have proceeded too far, being cured by a gradual and suitable repletion. This is the art of enjoying a life of health, which will recover lost health, and preserve it when once established; and, in the words of Dr. Maynwaring,—" It is health that makes your bed easy, and your sleep refreshing; that renews your strength with the rising sun; that fills up the hollows and uneven places of your carcass, and makes you plump and comely, and adorns your face with her choicest colours; that makes your exercise a sport; that increases the natural endowments of your mind, and makes the soul delight in her mansion."—Vide, *Tutela Sanitatis; or, Hygiastic Precautions and Rules, anno* 1663.

HEART-BURN. — Appetite impaired, with a gnawing or burning pain in the stomach or epigastrium, and a tendency to faint.

The symptoms here enumerated are sufficiently distinct to separate cardialgy, or heartburn, from indigestion, in which it is merged by Dr. Cullen and other authors; for in the last there is not necessarily a gnawing or burning pain; and the appetite is rather fastidious, than essentially, or at all times, impaired; though occasionally it evidently accompanies the latter affection, as well as a variety of other complaints, as flatulency, worms, retrocedent gout, suppressed menstruation, inflammation of the stomach, and various diseases of the heart, liver, pancreas, kidneys, and intestines; in hypochondriasm, and in sudden and violent emotions of the mind. It is also met with as an original affection, and ought therefore to be described as such. It is divided into the following varieties:—

1. *Heart-burn.* Gnawing or burning uneasiness, felt chiefly at the cardia, or upper orifice of the stomach; the tendency to faint being slight.

2. *Sinking Heart-burn.*—The pain or uneasiness extending to the pit of the stomach; with anxiety, nausea, coldness of the extremities, prostration of strength, and great disposition to faint.

3. *Black Water. Water Brash.*—Burning pain, extending over the epigastrium, and accompanied with an eructation of watery fluid, usually insipid, sometimes acrid.

The first variety is perhaps the most common; in the second the pain and uneasiness, though somewhat less intense, is far more general. The third is distinguished by a morbid increase in the quantity of secerned fluids; and hence the peculiar symptom of an eructation, frequently in considerable abundance, of a thin watery liquor, chiefly in the morning, after food has been abstained from for many hours, and when the stomach only contains its own fluids.

The following excellent description of this disease is given by the late Dr. Cullen, who, though he has separated it to a greater distance from dyspeptic affections, has transferred it to another order, and erected it, apparently contrary to his own mode of reasoning, into a distinct genus. " It appears most commonly in persons under the middle age, but seldom in any persons under the age of puberty. When it has once taken place, it is ready to recur occasionally for a long time after; but it seldom appears in persons considerably advanced in life. It affects both sexes, but more frequently the female. The fits of this disease usually come on in the morning and forenoon when the stomach is empty. The first symptom is a pain at the pit of the stomach, with a sense of contraction, as if the stomach were drawn towards the back: the pain is increased by raising the body into an erect posture, and therefore the body is bended forward. The pain is often severe; and, after continuing for some time, brings on an eructation of a thin watery fluid in considerable quantity. This fluid has sometimes an acid taste, but is very often absolutely insipid. The eructation is for some time frequently repeated; and it does not immediately give relief to the pain which preceded it, but does so at length, and puts an end to the fit."—*First Lines of Medicine*, vol. iv. p. 13.

Causes.—Under whatever variety this disease shews itself, it is chiefly regulated by the habit of the individual; the remote causes are indigestible food, or other ingesta; the habitual and copious use of very cold or very hot beverages, but especially the latter; indulgence in spirituous drinks; worms, and insects or their larvæ; drastic purges; obstructed perspiration; repelled cutaneous eruptions; and vitiated or excessive bile. Of the indigestible foods, the most common are animal fat, oil, butter, or cheese, eaten in excess—which last has produced a cardialgy that continued for three years.* The stones or kernels of fruits have often laid the foundation for the complaint, especially where they have remained, as they have been occasionally found to do, and particularly cherry-stones, for two, or even three years, with little or no material change.† All these causes have a direct tendency to produce weakness of the stomach, especially a diminution of tone, or weaker action in its muscular fibres; and a morbid condition of the fluids secreted by, or poured into it.

Acidity, it would appear, is common to all the varieties of this complaint, to such a degree that, as Dr. Darwin observes, "the contents of the stomach, when regurgitated on a marble hearth, have been often seen to produce an effervescence on it." This acid, according to the experiments of M. Perperes, a French chemist, is chiefly the acetous; and he has found that not less than two ounces and six drachms of it, have been produced by eight ounces of roasted chestnuts, an aliment that ferments in the stomach for an hour and a half, and is even then digested with difficulty. In some cases, the formation of acetous acid seems to be favoured by the nature of the gastric fluid itself, which appears to be secreted in too dilute or weakly a condition for the purposes of digestion; on which account the food, instead of being converted into chyme, runs readily into a state of fermentation, so that some persons cannot take either honey or sugar without producing this effect; while in others, the gastric juice itself, when first secreted, may possibly contain too large a portion of the muriatic acid, which, according to the late valuable researches of Dr. Prout, is found in the stomach during digestion.

Treatment.—The means of curing this complaint are twofold—namely, to palliate the present distress, and to prevent a return of the paroxysm. The first may be promoted by small doses of opium, and sometimes by other antispasmodics, as the ethers, and volatile alkali; and, where acidity is unquestionable, by calcareous and saponaceous earths.—See *Antacids.*

Oleaginous preparations have been tried, and in some constitutions with apparent benefit. The complaint may also be palliated by mucilaginous substances, such as Spanish liquorice, or gum arabic: and in many cases, the eating of six or eight almonds has afforded speedy and effectual relief. In taking off the acidity of the stomach, M. Perperes (*Auct. Citat.* vol. ii.), unites the calcareous earths with a warm bitter; and recommends as the medicine he

* Paulini, de Nuce Moschata, sect. iii. p. 3. Eph. Nat. Cur. Dec. 11. Ann. v. app. 71.

† Bresl. Samml. 1725, 1. p. 77. Gronen. Commeri. Liter. Nov. 1733. p. 189.

has found the most successful, calumba root with magnesia, in doses of ten grains of the former to twelve of the latter. It is remarked by Dr. Darwin, that as the saliva swallowed along with our food prevents its fermentation, considerable relief is sometimes derived from frequently chewing parched wheat, mastic, or a lock of wool, and swallowing the spittle thus secreted into the mouth. When acidity in the stomach, however, is the exciting cause, there are few medicines that can more fully be depended on than soap. "It is often," says Dr. Cullen, "a more convenient remedy than common absorbents or simple alkalies." If the pain be very severe, the beneficial operation of the soap will be materially assisted by combining it with opium, (a quarter of a grain of the latter, with five grains of the former). Cullen further observes, that he has found nothing but opium that will give it real relief; and he afterwards adds, "but this relieves only the present fit, and contributes nothing to the prevention of future attacks. Hence, in every case, the views of the medical practitioner should be directed to the second intention—namely, to prevent a recurrence of the paroxysm; which can only be effectually done by restoring the stomach to its proper tone. (See *Indigestion*). The warmer bitters, the metallic oxyds, especially those of zinc and bismuth, first mentioned by Odier, bid fairest for success. Of the bitters, one of the most elegant as well as most beneficial, is the extract of camomile; yet the dog's camomile (*matricaria chamomilla*) seems to rival its powers, and has often been found a very active and useful stomachic in most debilities of the stomach.

The diet of people attacked with, or labouring under any predisposition to this complaint, should consist of articles least disposed to run into fermentation—as animal food generally, shell-fish, biscuits; and the liquid aliment, or drink, should consist of weak brandy and water, toast and water, lime, or most of the mineral waters.—See *Indigestion*.

HEAT, HOW APPLIED IN COOKERY.—Whatever may be the fuel from which heat is produced, it is applied in various ways to the substances to be cooked, either directly or indirectly. As a radiant heat, it is applied directly in the process of wasting, in which the effects are entirely produced by the rays of heat impinging directly upon the substances placed at a short distance before it; for this purpose a clear glowing fire is necessary, and the bars of a good roasting grate should impede as little as possible the radiation of heat.

Another very direct mode of applying heat, is placing the substance over the fire by suspending it in the stream of heated air ascending from it, or laying it directly on the burning fuel, or on bars, or on a plate of iron, or other substances capable of supporting heat; broiling is the result of this method of application. Heat is often employed through the intervention of fluids, chiefly of water or steam, and in boiling or stewing, or of some oily substance, as in frying. The peculiarity of baking consists in the substance being heated in a confined space, which does not permit the escape of the fumes arising from it.

To understand well the theory of cookery, the action of heat upon the various constituents of alimentary substances must be attended to, as applied directly or indirectly, through the medium of some fluid: in the former way, as exemplified in the processes of roasting and boiling, the chief constituents of animal substances undergo the following change: the fibrine is corrugated, the albumen is coagulated, the gelatine and osmazome rendered more soluble in water, the fat liquified, and the water evaporated: if the heat exceed a certain degree, the surface becomes first brown and then scorched. In consequence of these changes the muscular fibre becomes opaque, shorter, firmer, and drier; the tendons less opaque, softer, and gluey; the fat is neither melted out, nor rendered semi-transparent. Animal fluids become more transparent, the albumen is coagulated, separated, and they dissolve gelatine and osmazome. Lastly, and which is the most important change, and the immediate object of all cookery, the meat loses the vapid nauseous taste and smell peculiar to the raw state, and it becomes savoury and grateful to the palate. Heat applied through the medium of boiling oil, or melted fat, as in frying, produces nearly the same changes, as the meat is sufficient to evaporate the water, and to induce a degree of scorching; but when water is the medium through which the heat is applied, as in boiling, stewing, and baking, the effects are somewhat different, as the heat never exceeds 212°, which is not sufficient to commence the process of browning or decomposition, and the soluble constituents are removed by being dissolved in the water, forming soup or broth; or if the direct contact of the water be prevented, they are dissolved in the juices of the meat, and separated in the form of gravy.

Whether the heat be directly or indirectly applied, there must be a considerable loss in the cooking of animal substances, in public institutions, where the allowance of meat is generally weighed out in its raw state, and includes bones, and is served out cooked, and sometimes without bone; and it is a matter of importance to ascertain, as near as possible, their relative proportions. As regards this circumstance much depends, on the piece of meat to be cooked, the degree of cookery, and the attention bestowed upon it. We have been informed by persons who salt rounds of beef to sell by retail, after they are boiled, that they are able to get nineteen pounds of cold boiled beef from twenty-five pounds of raw, but the meat, it must be confessed, is always underdone.

Messrs. Donkin and Gamble boiled in steam thirty pounds of captain's salt meat; the meat when cold, without the bones, which amounted to five pounds six ounces, weighed only thirty-five pounds; in another experiment, 113 pounds of prime mess beef gave nine pounds ten ounces of bone, and forty-seven pounds eight ounces of meat; and in a third experiment, 213 pounds of mess beef gave thirteen pounds eight ounces of bone, and 103 pounds ten ounces of meat; or taken in the aggregate, 372 pounds of salt meat, including the bones, furnish, when boiled, 186 pounds six ounces without bone, being about fifty per cent., or disregarding the bone altogether, salt must lose by boiling about 422 per cent.

In roasting, the loss arises from the melting out of the fat, and the evaporating out of the water, but the nutritious matter remains condensed in the cooked solid; and in boiling the loss is occasioned partly by the fat melted out, but chiefly from gelatine and osmazome dissolved in water in which the meat is boiled; there is, therefore, a real loss of nourishment, unless the broth be used, when this mode of cooking becomes the most profitable as well as the most economical.

We are indebted to Professor Wallace, of Edinburgh, for the detail of a very accurate and extensive experiment in a public establishment, the results of which were, that in pieces of ten pounds weight each, 100 pounds of beef lost upon an average by boiling, twenty-six pounds four ounces; by baking, thirty pounds two ounces: by roasting, the shoulder, thirty-one pounds one ounce; the neck, thirty-two pounds four ounces; the loin, thirty-five pounds nine ounces. Hence, generally speaking, mutton, by boiling, loses one-fifth of its original weight, and beef about one-fourth; again, mutton and beef lose, by roasting, about one-third of their original weight.

Vegetable substances are most commonly boiled or baked, or if apparently fried or roasted, there is always much water present, which prevents the greater action of the fire from penetrating below the surface. The universal effect of cooking upon vegetables is to dissolve some of their constituents in the water, such as the mucilage and starch; and to render those that are not properly soluble, as the gluten and the fibre, softer and more pulpy, consequently easier of digestion.—See *Temperature, reduction of.*

HEATH.—(*Erica Vulgaris*, L.)—The young tops of the heath are said to have formerly been used alone to brew a kind of ale; and even now the inhabitants of Isla and Jura continue to brew a very potable liquor, by mixing two-thirds of the tops of the heath with one of malt.—See *Lightfoot's Flora Scotica.*

HEDGE-HOGS. — Hedge-hogs are eaten in many parts of the world; and in Germany the country people use them as we do other kinds of animal food: they are said to be pleasant to the taste, to strengthen the stomach, to loosen the bowels, and provoke urine, though rather hard of digestion. They were once considered as a great delicacy.

HERRINGS.—The great colony of herrings, we are told, sets out from the icy sea about the middle of winter, composed of such numbers as exceed all imagination. The main body begins in a certain latitude, into two grand divisions, one of which moves westward, and pours down the coast of America; the other takes a more easterly direction, and falls in with the great island of Iceland, about the beginning of March. The Shetland isles oblige them again to divide into two shoals, which shape their course along the eastern and western coasts of the British isles; and the last are observed to be much fatter, as well as considerably more abundant than those on the east side. The immediate cause of these migrations is supposed to be their strong desire to remove to warmer seas for the sake of depositing their spawn, where it will vivify with more certainty than under the frigid zone. It cannot be from defect of food that they leave the polar regions, whatever that food may be, for they come to us full of fat, and on their return are generally observed to be very lean.*

The inestimable benefit which this plentiful supply of food would prove to the wretched peasantry of the western coasts of Scotland, is however, says Dr. Garnett, in a great measure prevented by the impolicy of the salt laws, which, though now removed, cannot fail to remind many of our readers of Thomson's pathetic lines on the same subject.

Oh! is there not some patriot in whose power,
That best, that god-like luxury, is placed
Of blessing thousands, thousands yet unborn,
Thro' late posterity? to give
A double harvest to the pining swain,
And teach the labouring hand the sweets of toil?
——————With venturous oar,
How to dash wide the billow; not look on
Shamefully passive, while Batavian fleets,

* From a series of facts and observations on the migration of the herring: see Dr. Anderson's Sixth Volume of Recreations, where the commonly received opinion of the annual passage of this genus of polar fish is erroneous.

Defraud us of the glittering finny swarms,
That heave our friths, and crowd upon
our shores.

Our countrymen have long been reproached, and apparently with a good deal of justice, for their remissness in this lucrative branch of commerce. The advantageous situation of our coasts might be of immense benefit to us, did we not permit the Dutch, Hamburghers, and others, to come yearly, in vast numbers, and not only to take the fish from our own coasts, but sell them to us for our money, when they have done.

The Dutch were the first who began the herring fishery, and observed the several seasons of their passing about the year 1164; but the present method of pickling them was not discovered till 1416, though others date it from the year 1397. Willoughby, in his history of fishes, observes, that William Buekelsz, or Bachalen, a native of Bier Uliet, rendered his name immortal by the discovery of the secret of curing and pickling of herrings, which he might probably have learned from the people of Yarmouth, where herrings were not only salted and dried for red-herrings, but salted and barrelled up wet, at different times, from the year 1306 to 1360. He adds, that the emperor Charles Vth, coming into the Low Countries, made a journey to the isle Bier Uliet (which is situated a few miles east of Sluys, in the late Dutch Flanders), with the Queen of Hungary, on purpose to view the tomb of the first barreller of herrings, who died in 1447.

Scotland, it is generally allowed, suffers incredibly on the above score: no country in Europe can pretend to rival it in the abundance of the finest fish, wherewith its numerous harbours, lakes, and rivers are stored. The Scottish isles, especially those on the western side, do certainly lie most commodiously for carrying on the fishing trade. Had, says Mr. Belsham,* a tenth part of the immense sums dissipated and squandered in Italian and German subsidies, been employed in erecting towns, forming canals, building vessels, and procuring implements, in order to carry on the fisheries to advantage on the spot, the Highlands of Scotland might at this day have exhibited a smiling scene of industry and plenty, instead of presenting to our view the cheerless aspect of poverty and wretchedness, or rather the hideous picture of solitude and desolation.

That the natives of some parts of these districts are not, however, wholly inattentive to the piscatory occupation, is amply confirmed by two respectable tourists. Loch Fyne, says the Rev. Mr. Gilpin, is a salt lake communicating with the sea. It has a crowded navigation, being one of the favourite haunts of the herring, and at certain seasons of the year is frequented by numerous shoals, insomuch that the lake is said to contain *one part water, and two parts fish.* In a single bay of this lake, about 600 boats are sometimes employed in taking them; each of these vessels clears on an average annually forty to fifty pounds, according to Dr. Garnett, who adds, that 20,000 barrels, each on a medium containing 700 herrings, have been cured in one season in Loch Fyne.†

HERRINGS, AND OTHER DRIED FISH, TO COOK.

RED HERRINGS.—Soak them in water until they become pretty fresh, they are then hung up in the sun and wind, on a stick through their eyes, and then boiled or broiled as wanted. In this way they eat almost as well

* Memoirs, Vol. II. p. 186. First edition.

† For a particular history of herrings, see "Solus Dodd's Natural History of Herrings," in 178 pages, 8vo. 1752.

as if newly caught.* Scotch haddocks should be soaked all night; you may boil or broil them; if you broil, split them in two. All the different sorts of dried fish, except stock fish, are salted, dried in the sun in prepared kilns, or by the smoke of wood fires, and require to be softened or freshened in proportion to their bulk, nature, or dryness. The very dry sort, as cod, whiting, &c., should be steeped in lukewarm water, kept as near as possible to an equal degree of heat. The large fish should be steeped twelve hours, the smaller two, after which they should be taken out and hung up by the tails until they are dried. The reason for hanging them up is, that they soften equally as in the steeping, without extracting too much of the relish, which would render them insipid. When thus prepared, the small fish, as whiting, turks, &c., should be floured and laid on the gridiron; and when a little hardened on the one side, must be turned and basted with sweet oil upon a feather, and when basted on one side and well heated through, taken up. A clear charcoal fire is the best for cooking them, and the fish should be kept at a good distance to broil gradually. When they are done enough they will swell a little in the basting, and you must not let them fall again; if boiled, as the large fish generally are, they should be kept just simmering over an equal fire, in which way half an hour will do the largest fish, and five minutes the smallest. Dried salmon, though a large fish, does not require more steeping than a whiting, and when laid on the gridiron should be immediately peppered. To herring and other kinds of salt fish, sweet oil is the best basting.—(See *Macdonald's London Family Cook*, 8vo. 1808, page 139). "A red herring," says Dr. Harte,* "doth nourish little, and is hard of concoction, but very good to make a cup of good drink relish well, and may be well called *the drunkard's delight.*"

* See the Hon. Sir John Cochran's "Seaman's Guide." 8vo. 1797, p. 34.

HERRINGS, TO CURE. — The preference which the Dutch give to the herrings caught upon their own coast, when cured by themselves, is a source of great advantage to them. The only salt used by them is the Spanish or the Portuguese; they preserve no fish that they are not able to cure between sun-rise and sun-setting, when the nets are drawn, and sun-set, when they are again shot; and they pay particular attention in getting, sorting, and packing each kind by itself. They fill up the barrel with the same kind of fish and night's catching, and are exceedingly careful of the pickle, as they use no other in filling their barrels. Herrings, as well as salmon, are also often cured by drying them in a wood smoke, after being slightly salted, after which they are called red or Yarmouth herrings.

Herrings are pretty nourishing, easy of digestion, and produce good juice. The pickled are, as observed, hard of digestion, and but indifferent food; they heat, cause fetid eructations, thirst, and sharp pungent humours. When fresh they agree, in cold weather, with any age and constitution. In the pickled state, they are not good for young people of a hot, bilious constitution.

HIBISCUS.—A stone annual, a native of the West Indies, (*Hibiscus Esculentus*, L.), and introduced in 1692. A soft herbaceous stalk rises from three to five feet high, with crenate leaves and axillary, pale sulphur-coloured flowers, succeeded by capsules. These, in the West Indies and south of France, are put into green soups, or eaten with butter. In the south of France it is cultivated in the open air for this pur-

* Essay on Diet. 1633. Fol. p. 91.

pose, and at Paris it is treated as we do the capsicum and love-apple. A similar treatment would no doubt succeed in this country.

HOCK.—See *German Wines*.

HONEY. — A sweet vegetable juice, collected from the flowers of various plants, by "Nature's confectioner," the "skilful BEE." Of the economy of these insects, alike remarkable for industry and art, wonders are related by naturalists. The moral virtues have been all, at one time or the other, attributed to them; and they have been particularly celebrated for their prudence, industry, mutual affection, unity, loyalty, public spirit, sobriety, and cleanliness. Certain it is, that the industry and activity of bees in their domestic labours, afford a very instructive and amusing spectacle; *all* are busily engaged in their several departments: whilst some are employed in gathering honey or wax, others repair decayed combs; some carry out the dead, and cleanse the hives; others again, keep guard upon the floor:—

> And sad-ey'd Justice with his surly hum,
> Delivers o'er to executors pale
> The lazy yawning drone.
> ———— so work the honey bees;
> Creatures, that by a rule in Nature teach
> The art of order to a peopled kingdom.
> SHAKSPEARE.

These active and useful insects, are eulogised by other of our poets, and particularly by Thomson in his Seasons.

The honey of Hybla, on the east coast of Sicily, and of Hymellus, a mountain of Greece, near Athens, was reckoned by the ancients the best in the world. That of Minorca, an island in the Mediterranean, and Narbonne, in France, is deemed excellent; and that of Hampshire, is considered the best in England.—Virgin honey, is that deposited in clean new cells, which, when first formed, is of a pure white colour. Honey collected from some plants is intoxicating and poisonous to man; from others, it is hurtful to the bees that collect it; and from some flowers it is so injurious or disagreeable, that they do not collect it.—See *Darwin's Temple of Nature*, p. 63.

Honey is an excellent food. It is supposed to consist of sugar, mucilage, and an acid. Considered as a medicine, honey is a very useful detergent and aperient, powerfully dissolving viscid juices, promoting expectoration; and, in some instances, has been remarkably efficacious in asthmatic cases. In the asthma of elderly people, honey is peculiarly serviceable, in resolving the tough viscid phlegm—a spoonful night and morning, or oftener. Where honey gripes or disorders the bowels, a portion of cinnamon or ginger powder may be added, which will prevent this inconvenience. In humid asthma, and chronic winter cough, the following is an excellent prescription—

Take—

Flour of sulphur . .	1	ounce,
Nutmeg in powder .	1½	drachm,
Senna in powder . .		
Ginger the sames of each	2	drachms,
The best honey . .	2	ounces,

of which let an electuary be made, and the bulk of a common nutmeg taken twice in the day. This prescription, we are told, was sent over from Holland, by the celebrated Boerhaave, to Lord Ferrars, and from which he experienced the greatest relief.*

The syrup of capillaire, so celebrated at one time for coughs and

* Honey is particularly recommended to the asthmatic, and those subject to gravelly complaints, for its detergent nature. Founded upon the popular opinion of honey, as a pectoral remedy, Dr. Hill's balsam of honey, a quack medicine, was once in demand; but this, besides honey, contained balsam of Tolu, or gum benzoin in solution.

disorders of the chest, derives its virtue, in a manner entirely from honey. Honey was also the principal ingredient of the Aristæan confection—namely, the Silphian confection, invented by Aristæus, a king of Sardinia; who used it as a proper dissolvent and corrector of that excellent but ill-scented medicine, assafœtida. He found honey capable of dissolving that gum, and mixing it with ingredients which would abate its ill-scent and assist its efficacy; and on this principle he invented the confection, for which he has been celebrated more than Mithridates. It was given in that flatulent colic to which hypochondriac people are peculiarly subject, though it was not limited to this alone.

There was a time when honey was more used than it is at present, because the demand arose from necessity. Before the knowledge of sugar, this healthful sweet supplied its place.—See *Sugar*.

HOPS *(Humulus Lupulus*, L.*)*—The virtues of many medicines are only to be ascertained by experiment and careful observation, and it is much to be lamented that a considerable number of articles among medical materials, have either been wholly over-looked, or but superficially examined. Among these may be reckoned the common hop, which until very lately has been scarcely at all used as a medicine, though it is now well known that under proper management it is capable of affording considerable relief in many important diseases. Previous to our recommendation of the hop, not only as a medicine, but as an agreeable and aromatic bitter, we shall premise these and other observations with the following brief historical sketch of this valuable plant.

"The humulus lupulus" (the hop) says Chambers, "appears to have been brought into this country from the Netherlands, in the year 1524." It is mentioned in the English Statute Book, 1552—namely, in the fifth and sixth of Edward VI. chap. 5. And by an act of parliament in the first year of King James I., anno 1603, chap. 18, it appears that hops were then produced in abundance in England. It is also observed that "in the spring time, while the bud is yet tender, the tops of the plant being cut off, and boiled, are eat like asparagus, and found very wholesome, and effectual to loosen the body; the heads and tendrils are good to purify the blood in the scurvy and most cutaneous diseases. Decoctions of the flowers and syrup thereof are of use against pestilential fevers. Juleps and apozems are also prepared with hops, for hypochondriacal and hysterical affections, and to promote the menses; a pillow stuffed with hops, and laid under the head, is said to procure sleep in fevers attended with delirium."

Coles in his History of Plants, published in 1657, relating the virtues of hops, says, "they are good to cleanse the kidneys of gravel, and to provoke urine, they likewise open obstructions of the liver and spleen, cleanse the blood, and loosen the belly; and, as they cleanse the blood, so consequently they help to cure eruptions of the skin." He also says, "half a drachm of the seeds powdered and taken in drink, will kill worms," and adds, that "the expressed juice will cure the jaundice." Brookes's Dispensatory, published in 1753, speaks thus of hops: "Lupulus, hops; the heads. They help digestion, open obstructions of the viscera, especially the spleen; promote urine, and loosen the belly; they are good in hypochondriac passion, the scurvy, and diseases of the skin, if given as an alterative, in whey or broths. The inspissated juice may be given from two to four ounces; the decoction of the tops from one to two handfuls; and half a drachm of the seeds may be given against worms."

In the second edition of Lewis's Dispensatory, speaking of hops, he says, "these are one of the most agreeable of the strong bitters, though rarely employed for any medicinal purposes. Their principal composition is in malt liquors, which they preserve from undergoing the acetous and putrefactive fermentations, render less glutinous, and dispose to pass off more freely by urine. The odour of hops hung in a bed is said to have induced sleep when opium has failed. The same author, in his Materia Medica, observes, "hops have a very bitter taste, less ungrateful than most of the other strong bitters, accompanied with some degree of warmth and aromatic flavour. They give out their virtue by maceration without heat, both to rectified and proof spirits, and by warm infusion to water; to cold water they impart little, though macerated in it many hours. The extracts obtained by watery and spirituous menstrua, particularly by the latter, are very elegant balsamic bitters, and promise to be applicable to valuable purposes in medicines, though the hop is at present scarcely regarded as a medicinal article, and scarcely otherwise used than for preserving malt liquors, which, by the super-addition of this balsamic, aperient, diuretic bitter, becomes less mucilaginous, more disposed to pass off by urine, and in general more salubrious." Dr. Motherby says, "the scaly heads of hops, have a bitter, warm, aromatic taste; they give out their virtue to spirit, both proof and rectified, by maceration without heat, and to water by warm infusion. The extract obtained from the spirituous tincture is an elegant bitter." Dr. Cullen in his lectures on the Materia Medica, observes that "the hop is a pretty strong bitter with a slight aroma."

Herophilus Labbius, attributes to the hop a lithontriptic property, and says, that by a duration of it, he has softened the hardest urinary calculi; and Darelius assures us that half a pint, or a whole pint of the decoction of hops, drunk in the morning, possesses much virtue as an anthelmintic or worm expeller. From these testimonies, as well as from our own observation, we are persuaded that the hop is eminently beneficial as an alterative and tonic; that it is a good diuretic, that it acts gently as an aperient, and that it possesses considerable powers as a sedative, having in many cases procured rest, and afforded relief from pain, when opium and other medicine had failed. The infusion or decoction, is in our opinion, the best means of using it. These may be used with considerable advantage in scorbutic habits, stomach and bowel complaints, nervous languor and debility, cutaneous eruptions, and also in gout, both regular and atonic. To elderly people a weak infusion of the common hop is the best drink they can use, it strengthens the stomach and bowels, prevents the accumulation of wind, and beneficially assists digestion. With such recommendations as these, who would not give it trial? the powder and extract of the common hop may be made into pills with the same a dvantages. *Take*—

Extract of hop . .	1	drachm,
Powder of ditto . .	½	drachm,
Rhubarb ditto . .	1½	drachm,
Ginger, powdered .	½	drachm,

Syrup, a sufficient quantity.

Make thirty-six pills, and take two morning and evening; these are tonic, gently aperient, and corroborant.

Young and tender hops are used for food, and are dressed in the same way as asparagus. They are, when the stalks become hard and full of wind, rather flatulent, and difficult of digestion. In the tender state, they agree with all ages and constitutions.

HORS D' ŒUVRE.—A small dish served during the first course.

HUNGER.—The want of solid

arguments is characterized by a peculiar sensation in the region of the stomach called hunger, and by a general feebleness, more or less marked. This feeling is generally renewed after the stomach has been for some time empty: it is variable in its intensely acid nature in different individuals, and even in the same individual. In some, its violence is excessive; in others, it is scarcely felt: some never feel it, and eat only because the time of repast is come. Many pessons perceive a drawing, a pressure more or less painful in the epigastric region, accompanied by yawnings, and a particular noise, produced by the gases contained in the stomach, which becomes contracted. When this want is not satisfied, it increases, and may become a severe pain; the same takes place with the sensation of weakness and general fatigue which is felt, and which may increase so as to render the motions difficult, or even impossible.

Hunger, appetite itself, which is only its first degree, ought to be distinguished from that feeling which induces us to prefer one sort of food to another; from that which causes us, during a repast, to choose one dish rather than another. These feelings are very different from real hunger, which expresses the true wants of the economy; they, in a great measure, depend on civilization, on habits, and certain ideas relative to the properties of aliments. Some of them are in unison with the season and climate, and then they are equally legitimate as hunger itself—such as that which inclines us to a vegetable regimen in hot climates or during the heat of summer. There are, morever, certain circumstances which render hunger more intense, and cause it to return at nearer intervals; such as, a cold and dry air, winter, spring, cold-baths, dry frictions upon the skin, exercise on horseback, walking, bodily fatigue, and generally all the causes which set the action of the organs in play, and accelerate the nutritive process with which hunger is essentially connected. Some substances being introduced into the stomach excite a feeling like hunger, but which ought not to be confounded with it. There are causes, also, which diminish the certainty of hunger, and which prolong the periods at which it habitually manifests itself; among which may be enumerated residence in warm climates, and inhabiting damp places, inactivity of body and mind, depressing passions, and, in fact, all the circumstances that interrupt the organs, that diminish the activity of nutrition. (See *Nutrition*). Also opium and hot drink, by being carried into the digestive canals, prevent hunger, or cause it to cease.

Like all other internal sensations, hunger arises from the action of the nervous system; it has no other seat than this system itself, and no other causes than the general laws of organization. The cause of hunger has alternately been attributed to the providence of the vital principle, and the frictions of the sides of the stomach against each other; to the dragging of the liver upon the diaphragm; to the action of bile upon the stomach; to the acrimony and acidity of the gastric juice; to fatigue of the contracted fibres of the stomach; to compression of the nerves of the latter viscus, &c.

The appetite for food may be impaired, excessive, or depraved. The sensation of hunger is seated in the stomach; and like that of thirst, is a natural or instinctive desire. It may, however, become diseased, and lose its natural character; and this in various ways, and accompanied with various sets of symptoms, each of which lays a foundation for a distinct species of the disease, though hitherto omitted in most nosologies, or loosely scattered over different parts of the classification, they evidently belong to a common family, and should be contemplated in a concentrated point of view. The species that properly appertain to it are the following:—

APPETITE DEPRAVED,
FLATULENCY,
HEART-BURN,*
INDIGESTION,*
FASTING, LONG,
SICKNESS,
VOMITING,
VORACITY—See *Gluttony*,
WATER-BRASH.

Appetite for improper and indigestible substances. In this species there is no want of appetite, but often indeed an inordinate craving. Instead, however, of its directing the patient to palatable and substantial food, whenever such can be obtained, it urges him in preference to the most whimsical and unnutritious materials.

An appetite for improper and indigestible substances may be of two kinds. It may proceed from a want of discrimination, as in infants or idiots; or it may proceed from a corrupt taste or indulgence, often founded on empirical or other dangerous advice, as the eating of chalk or acids, to produce a clear skin. The depraved appetite in child can only be the result of improper management and attention; since nothing is more tractable than the organ of taste in early life. And hence it is, that different nations of the world are brought by habit, almost coeval with their birth, to give the preference to such kinds of food as in their respective climes produce in greatest abundance, or as they obtain by an easy barter of indigenous substances. For example, the Hindoos live entirely on fruits and grain. The Tonguses on berries, the refuse lichen found undigested in the stomach of the reindeer, dried fishes, and beasts of prey. The Californians, on snakes, rats, lizards, rabbits, &c. intermixed with the wild herbs of the soil. But there is, perhaps, no stronger proof of the force of habit in forming an acquired taste, to be met with in any part of the world, than in our own country, in the exchange of the natural and instinctive of a bland and sweet fluid, as milk, for the bitter drink of tea for breakfast, and beer for dinner.

A longing for improper food and indigestible substances, is, however, produced by other means, and occurs in persons who are possessed of a sound judgment. It is not unfrequently traced as a symptom of some other disorder, as pregnancy, green-sickness, and perhaps some species of mental disorder. But it sometimes exists as a primary disease, and is then most commonly brought on by a vain desire of improving personal appearance. Whatever the cause, when this morbid propensity has once obtained the ascendancy over the natural taste, the substances for which it excites a desire are often of the most indigestible and disgusting quality. For instance, we have examples of dirt-eaters devouring cinders, odure, fire, spiders, lice, toads, serpents, leeches, bits of wood, squills, hair, candles, and many other species of filth. Mr. John Hunter describes a longing for diet, in the form of clay or loam, to have been an endemic among the blacks in Jamaica. But he is surpassed by Darwin, who informs us that he once saw a young lady, about ten years of age, that had filled her stomach with earth out of a flower-pot, after which she vomited it up, with small stones, bits of wood, intermixed with wings of insects.—*Zoonomia*, cl. III. 1, 2. 19.

Other individuals have had a taste for harder substances, and have regaled themselves with stones, glass, leaden bullets; and there is not a country in Europe but has supplied examples of distinguished knife-

* See these articles.

eaters. In short, we have had English, Prussian, Bohemian, American, and Brazilian knife-eaters. Many of these wretched individuals have perished shortly after the extraordinary feat—some have dragged on a miserable existence for years afterwards—and in some instances they have recovered. If depraved appetite should happen, as is sometimes the case, to be combined with voracity, there may be no bounds to the deglutition, either in quantity or quality.

Treatment.—This morbid action of the stomach is best counteracted by emetics and purgatives. Rhubarb is perhaps the best medicine for the last purpose, continued in moderate daily doses, in combination with tonics, as bark, steel, &c. And as an acid has often been suspected as the prevailing cause, the absorbent earths, as chalk, magnesia, and Armenian bole, have been used in large quantities, but the relief afforded by them is seldom more than temporary. In the *Mal d'estomac*, or African Cachexy, as it has been called, which corresponds with dirt-eating diseases of the negroes, alluded to by John Hunter, it is possible that great acidity may exist, and instinctively, for the use of absorbents to allay the morbid impulse.

I.

IMPERIAL.—A solution of cream of tartar, flavoured with lemon-peel. It ought never to be used except as a medicine in fevers and inflammatory affections. If employed as an ordinary drink, it is apt to retard digestion. If ever used as an article of diet, it should be under circumstances of robust health, and where a large quantity of animal food has been consumed.

INDIAN CORN (*Zea Mayo*).—In some parts the Indian corn is grown as a garden plant, the ears being gathered green or partially ripe, and boiled or roasted.

INDIGESTION (Dyspepsia).—Functional derangement of the digestive organs. The causes which give rise to indigestion, are all those which tend to debilitate the system in general or the stomach in particular. For instance, narcotics, as opium taken in immoderate quantities, (see *Opium*), spirituous liquors, tea, tobacco, the frequent use of warm relaxing liquors—sedentary occupations—imperfect mastication of food—certain depressing passions of the mind—a diet of a too flatulent and farinaceous nature; excessive evacuations—the too powerful operation of emetics and purgatives—diseases of the liver—hysteria and hypochondriasis; over-loading the stomach—excessive venery—exposure to moist and cold air—deficient secretion of the bile, saliva, gastric juice.—See *Digestion*.

Dr. Gregory, in his Theory and Practice of Physic, observes, "This ailment is met with in every country, in every class of society, in every season of the year." The meaning of Dyspepsia, according to its restricted signification, is limited to derangement in the functions of the stomach, without any other disease. The inconveniences of this limitation are pointed out by Dr. Gregory, and the term is extended to those cases of indigestion which are unattended with well marked general fever, local inflammation of the stomach, or other obvious *cognizable* disease of a remote organ. Dyspepsia is further reduced to *primary* and secondary; and the symptoms common to both are described as follow:—

Symptoms of Indigestion.—"The symptoms of dyspepsia are extremely diversified. They may be divided into such as are referable to the stomach itself, or to its sympathies with other parts of the body.—(See *Digestion, Organs of*). Among the first may be enumerated, loss of appetite—nausea, pain in the epigastrium or hypochondria, heartburn—a sense of fulness, distension or weight in the stomach—a feeling as if a ball was lodged in the gullet—acid or fœtid eructations—pyrosis or water-brash, or the vomiting of a clear liquor, often in vast quantity—and lastly, a sensation of *sinking* or fluttering at the pit of the stomach.

To the second head of Dyspeptic symptoms may be referred, among many others, costiveness, or an irregular state of the bowels, with a morbid state of the evacuations; pain of the back, and turbid urine; a disagreeable taste in the mouth, especially on first waking from sleep in the morning; toothach; palpitation of the heart, pulsation in the epigastrium; irregularity of the pulse; a short dry cough, and occasional difficulty of breathing; giddiness and headach, sometimes referred to the fore, but more commonly to the back part of the head; langour, lassitude, and great depression of spirits, with fear of death, or some other impending evil.

The tongue is very generally referred to as affording evidence of the state of the stomach; but it will often be found that the tongue is perfectly clean, when the stomach is most incontestably disordered. It would seem, indeed, as if the morbid appearances of the tongue, its fur, dryness, preternatural redness and smoothness, and its chopped aspect, are referable to the state of the constitution, rather than to any particular derangement in the stomach. When, however, we observe the tongue *furred* and *moist*, (its true character in common Dyspepsia), that is to say, when the secretions of the mouth are depraved, it may reasonably be presumed, that there exists a similarly disordered state of the stomach.—*Gregory.*

The following is Dr. Gregory's classification; to which are added, remarks on each variety, which our limits prevent from giving at the same time:—

Tabular view of the varieties of Primary Dyspepsia.

1. Dyspepsia from occasional overloading of the stomach.
2. From habitual over-feeding.
3. From habitual indulgence in spirituous liquors.
4. From want of air and exercise.
5. From excessive or long continued evacuations.
6. From anxiety of mind.

Tabular view of Secondary Dyspepsia.

1. Dyspepsia, symptomatic of general feverishness.
2. Of habitual constipation.
3. Of chronic disease of the liver.
4. Of chronic disease of the spleen.
5. Of functional disturbance of the uterus.
6. Of obscure disease of the kidney.
7. Of chronic affections of the bronchia.
8. Of chronic cutaneous diseases.

"It is unnecessary to say," observes Dr. Gregory, "that there is not one drug which will fulfil the great object of treatment, that of giving *tone* to the weakened stomach of a dyspeptic patient. This can be obtained only by measures calculated to avert the cause which may have excited the disease. The tone of the stomach never fails without some assignable reason, which strict inquiry will detect, and the knowledge of which will point out the proper means of relief. Nor is it often that these will fail of success, provided the patient have sufficient firmness to submit to them, and afterwards remain sensible that his health is in his own hands. The assistance of the physician, however, is very often required where the patient either cannot or will not submit to the measures which prudence dictates. In such circumstances we must endeavour to aid the digestive process by medicines; but I would wish to impress upon the student the impropriety of trusting to them in dyspeptic cases. He should remember that almost every drug will injure digestion in a healthy state; and he should learn, therefore, to be sparing of medicine when the stomach is weakened by disease."—*Gregory*.

Treatment.—The usual indications of cure in dyspepsia are to avoid the occasional causes — exhibit gentle emetics to remove crudities from the stomach—to correct morbid acidity by the interposition of alkalies and absorbents, alone or combined with laxatives. Diarrhœa, should it accidentally occur, by absorbents, and if the fæces be of an unnatural clay-like colour, purges of the submuriate of mercury must be given. To restore the tone of the stomach and intestines, vegetable bitters, as quassia, columba, gentian, &c.; tonics, combined with aromatics; pure air and exercise; the flesh brush and cold bath; attention to regimen, carefully avoiding the more indigestible and flatulent vegetables, malt liquors, &c. Substituting soda water, toast and water (see *Toast-water*), brandy and water, Madeira and sherry, for common drink. Pyrmont and Buxton waters. Warm clothing, particularly about the feet and legs.

In every form of dyspepsia attention to diet is indispensable, and the patient must have regard, not to its quality only, but to its quantity. In a weakened state of the stomach, it must have little given it to do. The body is strengthened, not in proportion to the quantity of food taken in, but to that which is thoroughly digested. Differences in the habits of life will, of course, lead to important differences in the kind and quantity of diet which should be permitted to a dyspeptic patient; but the following may be regarded as rules of very general application: — "It should consist in a due mixture of animal and vegetable food, but the former should be eaten only once a day. It should be thoroughly masticated. Great varieties of food at any one time should be prohibited, as leading to an indulgence of the appetite beyond the wants of the system. Articles of difficult digestion (see *Substances, indigestible*), should be carefully avoided; such as all kinds of smoked, hard, dried, salted, and long kept meat; all those dishes where too much nutritious matter is collected in a small space. Eggs, for instance, potted meats, strong soups, and preparations of suet, fat and butter; lastly, all raw vegetables whatever, with the exception of ripe fruits. Regularity in the hours of meals should be rigorously enjoined, and the patient directed to abstain from food at all other times.—*Gregory's Theory and Practice, &c.*

Organs in the animal economy (see *Digestion, organs of*) cannot long be so deranged as to produce vitiated secretions, without, at the same time, giving rise to other deviations from health. The debility of stomach which prevents a due secretion of gastric juice, must at length produce some of those other effects which are witnessed in disorders of this organ. The symptoms which arise immediately from indigested food, exist in various degrees in different cases. People frequently complain of a sense of distension after eating, of flatulent and acid eructations, who, notwithstanding, enjoy general good health, and find that even these symptoms may be prevented by taking less food, and that of a more digestible quality. If they are prudent in this respect, and the constitution is otherwise sound, and not exposed to the effects of indolence and other causes weakening the nervous system, the stomach will often recover its powers without further means.—See *Wilson Philip, M.D., on Indigestion, &c.*

Investigating the treatment of disorders of digestive organs, it is necessary to ascertain not only the medicines that are beneficial, but also what change they produce in the circumstances of the disorder. The administration of a medicine may in one case be succeeded by a discharge of bile, and a striking relief from long continued and distressful feelings; yet the same medicine may be given in many other instances, without producing the same effects. How then are such changes to be accounted for? From peculiarity of constitution, and dissimilarity of cause.

"I have already explained to the patient," says Mr. Abernethy, "the objects I had in view, in correcting the disorders of the digestive organs, by saying, that there are three things which I consider as right and necessary to the cure of disorders. *First:* That the stomach should thoroughly digest all the food that is put into it. The patient perceiving the necessity of this end, becomes attentive to his diet, and observes the effect which the quantity and quality of his food and medicine have upon his feelings, and the apparent powers of his stomach. *Secondly:* That the residue of the food should be daily discharged from the bowels; here, too, the patient apprised of the design, notes what kind and dose of purgative medicine best effect the intention, and whether it answers better if taken at once or at intervals. *Thirdly:* That the secretion of bile should be right, both with respect to quantity and quality. In cases where the secretion of bile has been for a long time deficient or faulty, I recommend, as I have said, irritating and undebilitating doses of mercury, to be taken every second or third night, till the stools become of the wet rhubarb colour; that is, of a deep brown, formed by the intensity of the yellow colour." This mode of exhibiting the blue pill has at least the advantage of being innocent, and if months elapse before the object be accomplished, we cannot wonder at the tardiness of the cure, when we consider the probable duration of the disorder prior to any attempt being made to correct it. The patient is relieved in proportion as the end is accomplished, which feeling induces him to persevere in such innocent measures.

The following is the plan, or rather the rules, as regards regimen and exercise, which Mr. Abernethy has laid down for dyspeptic patients. "They should rise early, when their powers have been refreshed by sleep, and actively exercise themselves till they feel a slight degree of fatigue. They should rest one hour, then breakfast, and rest three hours, in order that the energies of the constitution should be concentrated in the work of digestion—active exercise again for two hours, rest one; then taking their dinner, they should rest for three hours, exercise two, rest one, and take their third slight meal." As it is impossible to frame any general rule applicable to every case, the best criterion to regulate the exercise and diet of the patient by, will be a knowledge of the progress of the complaint, age, constitution, previous habits of life, origin and seat of the disorder, and degree of capability, functional as well as corporeal, which he enjoys at the time he applies for advice. This is the most rational mode of dictating the non-naturals—that is, to individual cases, and not by laying down rules for general application, which must ever prove fallacious, uncertain at best, and frequently dangerous, if not fatal.

Dr. Paris has endeavoured to improve the Abernethean system, but our observations on the latter equally apply here, and they may be briefly condensed into the following sentence —*Let me see the patient before I* *prescribe either medicine, diet, or exercise.* "The dyspeptic patient," says Paris, "should rise from his bed as soon as he wakes in the morning; for as Mr. Abernethy justly states, 'many persons upon first waking feel alert and disposed to rise; when, upon taking a second sleep, they become lethargic, can scarcely be awakened, and feel oppressed and indisposed to exertion for some time after they have risen.' He should then walk, or rather saunter, for some time in the open air, previously to taking his breakfast. He is now in a condition to follow his usual avocations; but it is a circumstance of no slight importance to procure an evacuation at this period, which is easily effected by habit; a person who accustoms himself to act at a certain hour of the day, will generally feel an inclination at the appointed season. The invalid should not allow his occupations, if sedentary, to engage him for more than three hours, after which, exercise on horseback, or by walking, should uniformly be taken. I have already observed, that the state of the weather ought not to be urged as an objection to the prosecution of measures so essential to health.—(See *Training*). Where the season of the year, and the situation of the patient, will allow the exercise, I strongly urge the advantages to be derived from digging. The stimulus thus given to the abdominal regions is highly salutary in dyspeptic affections. The hour of dinner should not be later than three o'clock, and the patient should rest for an hour before he sits down to a meal. It should consist but of few articles, should be carefully masticated, and the invalid should rise from the table at the moment that he perceives that the relish given by the appetite ceases. The manner in which he should re-regulate his potations, at and subsequent to this meal, has been already considered. With respect to the allowance of wine, every practitioner must use his discretion, and be guided by the former habits and recent condition of his patient. It is essential that the invalid should enjoy rest for at least two hours after dinner, that is to say, that he should not enter upon any occupation or diversion that may occasion the slightest fatigue; to a gentle walk, or a saunter in the garden, there can be no rational objection, especially at that season of the year when such a pastime is most inviting. At six or seven o'clock he may take some diluting liquid, as tea; after which, exercise will be highly useful, to assist the sanguification of his previous meal: in the summer season there will be no difficulty in accomplishing this object; and if the strength of the patient will allow the exertion, some active game, as bowls, will be attended with advantage. At ten o'clock he may take some toasted bread, or a lightly boiled egg, with a glass of wine and water, should his previous habits render such indulgence necessary, and at eleven he may retire to rest. The bed-room should be well ventilated, and its temperature should, as nearly as possible, be that of the apartment from which the patient retires. A well-stuffed mattrass is to be preferred to a bed of down, and the curtains should not be so drawn as to exclude the free circulation of air. The invalid should be careful not to retire to rest with cold feet; nothing contributes more readily to disturb sleep, and cause uneasy dreams, than the unequal circulation which takes place on such occasions." Such are the general rules laid down (not altogether speculative) for the protection of invalids who are subject to attacks of indigestion, which, though by no means new, are certainly rational, and, in most cases, attainable. There are particular features in the history of different cases, which may be consulted under their respective heads.—See *Bile and Stomach.*

Dr. Parry considers indigestion to consist of such a state of the villous coat of the stomach or intestines, or both, as subjects them to be morbidly susceptible of irritation from certain kinds of food, or certain changes of the food, which are not perceived, or produce no uneasiness in healthy stomachs; and this affection of the villous coat, throughout all its degrees, up to inflammation itself, is apt to be followed by sympathetic or symptomatic affections of the secretory arteries or glands seated in it, and often of the muscular coat of the alimentary canal itself. Dr. Paris, in his book on Diet, though we confess, rather gratuitously, believes that such an affection is the general consequence, although not the cause of dyspepsia. In the treatment, therefore, of this complaint, sedatives may, on such conclusion, be interposed with advantage. Protracted indigestion not unfrequently depends upon a morbid condition of the alimentary surfaces; the mucous membrane becomes affected, and the disorder is not removed until measures have been practised to restore the healthy secretions of this bowel. "A fretful state of the intestinal discharges is generally associated with such a disturbance, and I have found the administration of a lenient purge, every morning, with small doses of the vinum colchii (wine of meadow saffron) repeated twice a day, eminently successful in such cases,"—taking care to interpose occasional laxatives. Purgatives that act with violence are always followed with an aggravation of the symptoms. Broussais, a French physician, with whose doctrines practitioners are well acquainted, maintains that every disease arises from an inflammatory condition of the digestive canal; and, as observed by Dr. Paris, "although the absurdity of such a proposition must be admitted, we shall act wisely in suspecting the existence of such a state of disease in *protracted* dyspepsia: permanent tenderness upon pressure, and the appearance of the discharges from the bowels, will generally announce such a condition; and lenient purges, the application of leeches, and a low diet, will furnish the best method of treatment. "Whatever," as Dr. Philip remarks, "tends to restore a healthy nervous power to the stomach, tends to form the food into that substance which is best fitted to excite muscular fibres of this organ; and whatever excites the natural action of these fibres, tends to relieve the nerves from their load, and, in the most favourable way, to bring into contact with their extremities the food on which, through the intervention of the gastric fluid, their powers are to be exerted."

The general treatment of indigestion will, as may be seen by the preceding collection of observations, depend much upon the complexion of the case:—1st. By discovering the origin and seat of the disease; and, secondly, by attacking the symptoms in the order of their succession.

If it arise from a lax or weakened state of the stomach, in which either the secretions are scanty or vitiated, or the muscular powers of that bowel have lost their vigour, we have first to remove, as far as in our power, the remote causes which may have produced the disorder. The first passages must be cleared of all foul accumulations, and their return prevented, by means of strict adherence to a diet most likely to ensure its digestion, and by the careful use of aperient medicine, which may carry off all superfluous materials. The functions of the skin are next to be restored, and a general energy communicated to the body, by means of such remedies as are known to strengthen and invigorate the nervous system; in conjunction with air, exercise, bathing, change of scene, the use of flannel, friction, &c., &c.—See *Training*.

INTESTINES.—The intestines, or alimentary canal, include the whole passage from the mouth to the anus, though, strictly speaking, the term alimentary canal is more commonly employed to express only the stomach and intestinal tube. It may be represented as a long canal, commonly estimated as being five or six times the length of the adult, differently twisted upon itself, and of different dimensions in various parts of its extent. It is described by anatomists as composed of several distinct tunics or coats, the extreme of which may be traced throughout its whole extent, although their structure varies in different divisions of the canal.

The alimentary canal is susceptible of a peculiar motion, arising from the successive or simultaneous contraction of its longitudinal or circular fibres, and has been differently denominated by authors—some calling it *vermicular*, others *peristaltic*. This contraction always takes place slowly, and in an irregular manner; it is, however, capable of being accelerated by the action of certain stimulants. It does not appear to be sensibly controlled by the will; nor, indeed, does it appear to be dependent upon the nervous system, for it proceeds in the stomach after the section of the eighth pair of nerves, and it even continues, though the intestinal canal be completely separated from the body; at the same time, although these muscular fibres be independent of the nervous system, they may in every instance be influenced through it,—a fact of very great pathological importance, since it follows that the muscular fibres of the canal may not only be affected by causes acting directly on them, but by such as act by the medium of the nerves.—*Dr. W. Philip, on Indigestion.*

It is observed by M. Magendie, that the peristaltic motion becomes more active by the weakness of animals, and even by their death; and that in some, by this cause, it becomes considerably accelerated. The design of the peristaltic motion, is to propel the contents of the stomach forward, and to favour those changes they are destined to undergo.

The alimentary canal is never in a state of complete collapse; it always contains gas or vapour, which prevents its sides from coming in contact. It has been stated that this canal is of different dimensions, and it is principally from this diversity of magnitude that anatomists have established the following divisions:

1. The Stomach—See *Stomach*.
2. The Duodenum, } small intestines.
3. The Jejunum,
4. The Ilium.
5. The Cæcum, } large intestines.
6. The Colon,
7. The Rectum.

a, The *duodenum*, or first portion of the small part of the stomach, includes that range, which commences at the *pylorus*,* or lower opening of the stomach, and extends for about twelve inches; and so important are the changes which the food undergoes here, where it is mixed with the bile, &c. that many have looked upon it as a sort of second stomach. The *jejunum* commences at the precise point where the duodenum ends, which cannot, perhaps, be accurately defined, though the jejunum is generally considered as beginning where the mesentery takes its rise. It appears to have derived its name from the facts of its being usually found empty; probably from its more rapid powers of absorption. The *ilium* is the continuation of the jejunum, and is the last division of the small intestines; it is said to have derived its name from the manner in which it is coiled up in the mesentery.

* The inferior aperture of the stomach which opens into the intestines.

The large intestines exceed the others in diameter, but are less considerable in length. The *cœcum* constitutes the first division of this portion; the second the colon, which is the principal tract of the large intestines, and it exceeds them all in diameter. The colon has been divided into the *ascending* portion, which extends from the cœcum to the right hypochondrium, into the *transverse* portion, or what is termed its *great arch;* and into the descending portion, including what has been called its *sigmoid flexure*. The *rectum* is the last portion of the intestinal canal; it begins where the colon ends. It is called the straight gut, from its not being contracted; its coats are more thick and fleshy than those of any other of the intestines: its figure varies as it is full or empty; when empty, it is regularly cylindrical, and contracts in transverse folds: it is capable of very great distension; even to the size of a blown out bladder: and the quantity of fæces that sometimes accumulates in it is prodigious, and cannot be removed except by mechanical means.

K.

KETCHUP.—Salt flavoured by mushrooms, or the juice of walnuts, e.g. *Take*—Mushrooms, four pounds; common salt, two pounds; sprinkle the salt over them; when the juice is drawn out, add pimento, eight ounces; cloves, one ounce; boil them for a short time, and press out the liquor.—See *Soy*.

2. Mushroom juice, eight gallons; pimento, eight ounces; pepper, four ounces; cloves, four ounces; shalots, 12 ounces; long pepper, two ounces; salt, four pounds; boil for an hour.

3. Juice of young walnuts by the press, to a gallon add anchovies, two pounds; shalots, one pound; clove, mace, black pepper, of each one ounce; and a clove of garlick; boil a little, and bottle.

4. Juice of walnut shells, fifteen gallons; salt, half a bushel; ginger, shalots, garlick, horse-radish, of each three pounds; essence of anchovies, six quarts.

5. Walnut juice, six gallons; vinegar, twelve pints; anchovies, twenty-four pounds; pimento, one pound; ginger, two ounces; long pepper, three ounces; cloves, six ounces; shalots, twelve ounces; boil a little, and bottle.—Vide *Gray's Supplement to the Pharmacopœia*, p. 333.

KID.—The young male of a goat. The younger the more nourishing. When it has attained a certain age it becomes a he-goat; its flesh then is of a rank, unpleasant smell and taste, especially during the rutting season; it is, consequently, not used as food; it is however, that when it has been castrasted very young it fattens and yields good juice.—See *Goat*.

A kid for the table, ought to be selected under the age of six months and still sucking, and has not fed upon herbs. The dam should also be examined, to ascertain if she was healthy, well fed, and furnished good and wholesome milk. In proportion as the kid becomes older, so does its flesh become hard, of an unpleasant smell, bad taste, and hard digestion. The flesh of young kids is recommended to persons recovering from long sickness, in which they have been much reduced. It is nourishing and easy of digestion.

KIDNEYS.—The kidneys of animals are very hard to digest, even harder than the liver itself, and do not give out any effective nourishment. The kidneys of the younger animals are to be preferred, and especially those of the calf. The older the animal, the less nutritious and more difficult of digestion are the kidneys.

L.

LADIES'-SMOCK (*Cardamine Pratensis*, L.)—The leaves of this plant afford an agreeable acrid salad, greatly resembling the American cress.

LAMB.—Lamb is a light, wholesome food, not so nutritious as mutton, but extremely useful to delicate stomachs; this, however, applies only to the flesh of lambs that have not been robbed of their blood by repeated bleedings, or reared by the hand with milk adulterated with chalk, in order to make the meat appear white. Such practices, to render the food pleasing to the eye, at the expense of its alimentary properties, cannot be too much reprobated.

The vegetables most proper to be eaten with lamb, are those of an acidulated nature, as gooseberries, sorel, and the like. It is customary to eat this meat when very young; but a lamb that has been allowed to suck six months, is fatter and more muscular, and in every respect better, than one which has been killed when two months old, and before it has had time to attain its proper consistence. House lamb is a dish esteemed, merely because it is unseasonable. Like all animals reared in an unnatural manner, its flesh is insipid, and detrimental to health.

LAMB, TO CHOOSE.—See *Butcher's Meat, &c.*

LAMPREY.—There are two kinds of lamprey, the sea and river; both of which are used for food, in consequence of the goodness of their taste. The lamprey is the same shape as the large eel. It has a fat and delicious taste, is easily digested. It agrees, especially in the spring, with young people of a hot and bilious constitution; with those who have a good stomach, and whose humours are thin; but the old and phlegmatic should use it abstemiously. It has been said that it is pernicious to nervous people, and those disposed to gout or gravel. Those taken in fine, clear, running water, well fed and fat, are the best.

The sea lamprey is of the number of those fishes which leave the sea for a time, and return thither again. They usually leave the sea about the beginning of spring, and return to the rivers to spawn; after which they return with their young, to their former place, at a certain fixed period. The river lamprey remains in its native place, that is, in fresh water, and is frequently to be met with in brooks and springs, where the sea-water does not reach. As regards shape and taste, it corresponds with the sea lamprey, although it differs in size. Lampreys in the spring, are tender, delicious, and good eating; but at all other times, they are hard, tough, and have but little taste. The lamprey is more easily digested than the eel.

Lampreys are dressed several ways; they are boiled, roasted, or fried; baked in pies; they are salted and dried to preserve them longer for use, and to admit of them being more readily transported from one place to another. Some of the ancient authors have recommended them to be drowned in wine. Wine and spice are proper seasoning for this fish, not on account of its pretended malignity, which is supposed to be imaginary, but because they render the lamprey easier of digestion, by attenuating its thick and viscous juices.

LAPWING AND PLOVER.—We have placed these two birds together from the similarity of their habits, frequenting the same places and feeding upon the same food; their flesh being also alike in taste, and producing the same effects.

Some authors have so far confounded these birds, that they have given them the name of *vanellus* in common. They are both nearly of the size of a pigeon. They usually live near rivers and lakes; feed upon worms and flies; they fly with great force, and make a great noise in their flight. They are of an exquisite and delicious taste; but the plover is still daintier than the other. Their flesh is light, easy of digestion, and well tasted. There are two kinds of plovers, which differ chiefly in colour—the one is yellow, and the other ash-coloured. The plover has a kind of cap upon its head, of an oblong and black form; the neck is green, and the rest of the body party-coloured. In short, some plovers may be seen of a green, black, blue, and white.

LARD, to Lard.—A term in cookery, which means to stick bacon, or other specified articles, into poultry, meat, and the like, by means of what is called a larding-pin, one end of which is pointed, the other square and hollow, into which the *lardon* is put, the point is then inserted into the meat, and on being drawn out, leaves the *lardon* standing up in its proper place.

LARDONS.—The morsels into which bacon and other things are cut, for the purpose of larding meat or poultry.

LARDING-PIN.—A culinary utensil, by means of which meat and poultry are larded.

LARKS.—The lark is a delicious bird, and much esteemed in the quality of its taste. It is a savoury and easily digestible food; they lose, however, in these properties with age, and their flesh becomes hard, dry, and proportionately difficult of digestion. It agrees with all ages and constitutions, especially in autumn, at which season this bird is fatter, and in higher perfection than at any other time of the year.

LAUREL (*Laurus*).—The name of a genus of plants in the Linnæan system. The water distilled from the leaves of the *common laurel*, has been frequently mixed with brandy, and other spirituous liquors, to give them the flavour of ratifia; and the leaves are often used in cookery to communicate the same kind of taste to cream, custards, puddings, and some kinds of sweetmeats.

In the year 1728, an account of two women dying suddenly in Dublin, after drinking some common distilled laurel water, gave rise to several experiments, made upon dogs, with the distilled water, and with the infusion of the leaves of the common laurel, communicated by Dr. Madden of Dublin, to the Royal Society in London; and afterwards repeated in the year 1731, and confirmed by Dr. Mortimer; by which it appeared, that both the distilled water, and the infusion of the leaves, brought on convulsions, palsy, and death. The laurel of the ancients, or the bay, is, on the contrary, of a salutary nature, and of use in several disorders; but the common laurel is a plant of a very destructive kind, and taken in a large quantity, is a most formidable poison. If, however, it be administered with proper caution, and in a small proportion, the leaves of the plant are generally thought to be innocent; and therefore, for the kitchen purposes, as for the flavouring of custards and such like, the use in guarded and common moderation, may be continued in perfect safety. The bitter parts of the plant in which all the noxious properties are supposed to reside, are determined to be the same in quality, and not sensibly different in degree, from the bitter almond, or from the kernels of any of the stone fruit.—See *Almonds*. Linnæus says, that in Holland, an infusion of this kind of laurel, is used in the practice of the healing art. Miller also says, that laurel berries are perfectly innocent; a due attention, however, is requisite in the use of them. Prussic acid, the most active poison known at the present day, is contained in several vegetables, such as the cherry laurel, bitter almonds, the peach, its kernels, leaves, and flowers; the kernels of the black cherry; the bark of the bird cherry. As Prussic acid is characterized by an odour similar to that of bitter almonds, it has been conjectured, that all substances possessing this odour contain Prussic acid. The distilled water of the common laurel above-mentioned, has been proved a poison by several experimenters: when applied to wounds in animals, it induced vomiting, convulsions, great prostration of strength, diminished sensibility and death. And when injected into the jugular vein, its action was most rapid and intense. The cherry-laurel water also formed the subject of investigation in a very interesting criminal trial, whether it was or was not the cause of death, in the case of Captain Donellan for the murder of Sir Theodosius Boughton, in 1780.

LAVENDER (*Lavendula spica*, L.)—The lavender is a hardy undershrub, a native of the south of Europe, and introduced in 1658. The plant rises from two to four feet high, with hoary linear leaves, slightly rolled back at the edges; the flowers form terminating spikes, of a blue colour, and appear from July to September. The leaves and flower are powerfully aromatic. Lavender is rather a medicinal plant than one used in cookery; though a few plants are kept in every garden. Imitation scent bottles are made by the ladies, of the fragrant spikes. They are also put in paper bags, and placed among linen to perfume them. Lavender water, a well-known perfume, is distilled from the flowers; for which purpose the plant is extensively cultivated in different places, but more especially at Mitcham in Surry, and Maidenhead in Berkshire. There are two varieties of lavender, both equally good—the narrow-leaved, and broad-leaved.

LEAD.—Lead, like copper, is a metal much used for domestic and culinary purposes; and as it not unfrequently happens that articles of food, as well as water, are tainted by their combinations, and thus rendered pernicious to health, we shall here offer some remarks on this metal.

Lead is by no means an unfrequent ingredient in water, which, according to the custom of this country, is preserved in leaden cisterns, and conducted through pipes of the same metal; though it does not at all follow, on that or this account, the water should be necessarily tainted. Where the water contains carbonic acid in any quantity, it will be apt to have carbonate of lead suspended in it. It is very rarely the case that lead is in a state of solution in the water; so that in examining a suspected water, the sediment as well as the clear water must be attended to. The best tests for lead are sulphuretted hydrogen, which gives a brownish black precipitate in solutions containing lead; hydriodate of potash forms a yellow precipitate; sulphate of soda a white one, which heated before the blow-pipe or charcoal, affords a globule of the metal.—See *Prussiate of Potass.*

Metallic lead is not injurious to the human system, though, as observed, it is readily converted into the state of carbonate, by the contact of aërated water, and it is on this principle that we can explain the injurious effects which are frequently produced from drinking water which has remained in reservoirs of this metal, or passed through pipes of it. Dr. Yeats, in a paper on the water of Tonbridge Wells, mentions that in 1815, lead colics were very frequent in that place. A Mr. Taylor had laid down, in 1814, several thousand feet of leaden pipes, to convey water to the different houses. In the following year the lead colic occurred in those houses to which the water was distributed, and all doubt as to the existence of the poison in it was removed by the examination of Dr. Lambe and Mr. Brande. They detected the carbonate in a very minute state in the water.—*Brande's Journal*, vol. 14, p. 352. Carbonate of lead is insoluble in aërated water. It is diffused through it in a very minute state of division, and is very long in subsiding.—*Ibid.* vol. 14, p. 240.

A case somewhat similar to the above is given of the officers on board a packet bound to the East Indies. They put their allowance of water in a leaden cistern, furnished with a stop-cock, and in about three weeks every one of them was affected with all the symptoms of Devonshire colic, in the most violent degree. These facts prove that water resting in leaden reservoirs, cisterns, or pipes, may become impregnated with it. And there is danger to be apprehended from its use, if the quantity suspended be sufficiently large. The exemption occasionally experienced is to be attributed to the want of the last; and also to the circumstances that some kinds of water are unable to dissolve or suspend the lead.

In the Thames water, though it flows in leaden pipes, no lead can be detected in it; and this may be explained by the fact, that the animal matters which constantly accumulate in it, prevent any dissolution or suspension of the metal. They combine with it, and form a bulky insoluble precipitate. "If you add nitrate of lead to Thames water, you will find that it becomes milky, and that a white powder falls to the bottom, which dissolves without effervescence in nitric acid. It is, therefore, a combination of oxide of lead with some animal matter. Thus it is that the impurity of the Thames water prevents it from containing lead. Probably hard waters, containing sulphate of lime in solution, may also be free from lead. But with these exceptions, we may lay it down as a general fact, that all waters which pass through leaden pipes contain small particles of carbonate of lead."—*Dr. T. Thompson. Edin. Med. Surg. Journal*, vol. 3, p. 423.—See *Copper, Culinary Poisons, &c.*

LEGUMES, (see *Pease*).—"Point de legumes point de cuisiniere," is a famous French culinary adage; and deserves to be so. A better soup may be made with a couple of pounds of meat, and plenty of vegetables, than our common cooks will make with four times that quantity of meat; all for want of knowing the uses of soup-roots, and sweet and savoury herbs.

LEEKS (*Porrum*).—The leek is difficult of digestion, and causes flatulency. It is of a hot nature, and agrees best in cold weather with aged people of a phlegmatic temperament, and such as are of a gross habit of body, and do not take sufficient exercise. Those are best which grow in moist, fat, and marshy ground.

Leeks are abundantly sown in kitchen gardens; and are more used for food than physic. Most authors who have written on the leek, make it appear to be rather a pernicious vegetable; still, though much used among us, we do not find that it produces all the ill effects attributed to it. It is true it is somewhat hard of digestion; and at other times promotes flatulency, from the viscous and gluey phlegm contained in them; they ought, consequently, to be always well boiled before they are eaten.

Leeks are diuretic, lithontriptic, deobstruent, emmenagogue, aphrodisical, and detersive, according to the ancient writers; and externally applied (the boiled pulpy part) promote suppuration. The juice of the leek allays the pains and drummings of the ear.

LEMON.—A fruit brought from Spain and Portugal in great plenty. It is cooling and grateful to the stomach, is useful in fevers, and quenches thirst. The yellow rind is a grateful aromatic, and commonly used in stomachic tinctures and infusions, thus rendering other medicines acceptable both to the palate and stomach. The citron is distinguished from the lemon, in that it is bigger, and its pulp firmer. Distillers, confectioners, perfumers, &c., apply citrons to various purposes, and obtain from them essences, oils, confections, and waters. Genoa is the greatest nursery, which supplies the several parts of Europe with this, as well as with the orange and lemon trees. The lime is by some considered a species of lemon, by others not. It is a much smaller fruit, and in the West Indies is greatly preferred to the lemon, the juice being reckoned wholesomer, and the acid more agreeable to the palate. It is not often brought to England, nor is this fruit much cultivated in Europe. The best season for lemons is from November to March.

LEMON JUICE, ARTIFICIAL.—Pyroligneous acid, one pint, white sugar, three quarters of an ounce; dissolve, and add quintessence of lemon peel.

LEMONADE.—A pleasant, cooling, acid beverage, made by pouring boiling water on sliced lemons, and sweetening to the taste. Lemonade may be made instantly, in the following manner: Pound a quarter of an ounce (avoirdupois) of citric acid, *i. e.* crystallized lemon acid, with a few drops of the quintessence of lemon peel, and mix it by degrees with a pint of clarified syrup, or capillaire. Syrup of lemons may be made as follows: put a pint of fresh lemon juice to a pound and three quarters of lump sugar; dissolve it by a gentle heat, skim it till the surface is quite clear; add an ounce of thin cut lemon peel; let them simmer (very gently) together for a few minutes, and run it through a flannel. When cold, bottle and cork it closely, and keep it in a cool place.

1. Lemonade for Icing; *Orangeade for Icing.*—Rub off the yellow peel of three or four lemons with hard loaf sugar, one ounce; add sugar, four ounces; water, two pints. Cut the fruits (lemons) in half, and squeeze the juice into the syrup.

2. Lemonade; *Lemon Sherbet.*—White sugar, five ounces, flavoured by rubbing off the yellow peel of a lemon; dissolve in two pints of spring water, add the juice of three lemons. In hot countries this drink is apt to produce that much-dreaded scourge, cholera. For *Orange Sherbet*, use oranges instead of lemons; it is a more wholesome beverage.

3. Lemonade, Portable.—Acid of tartar, one ounce; sugar, six ounces; essence of lemon, ten drops; rub these together, and divide into twenty-four papers, for a tumbler of water each. Or, take concrete acid of lemons, one ounce; white sugar, four pounds; essence of lemon, two drachms.

4. Lemonade Shrub.—Juice of eight lemons; juice of barberries, three ounces; white sugar, half an ounce; white wine, half a pint; diluted at pleasure, to make lemonade or sherbet. In hot countries use orange juice, as lemon or lime juice is apt to produce cholera.

LENTILS.—Lentils afford indifferent nourishment; they cool the blood, and are detersive and binding when eaten whole; but laxative when the plain decoction of them is only used. Lemery says, they produce gross humours, cause obstructions in the bowels, and affect the sight, when used immoderately. They agree best with constitutions of a hot and choleric nature. They are mostly used in Catholic countries during the time of Lent. There are two sorts of them; the first are small and orbicular, thin towards the edges, raised in the middle, round, hard, and flattened, white, yellowish, or blackish; and two or three of them together in small pods; the other sort are two or three times larger; and in choosing them both, the plumpest are the best, and easiest boiled.

LETTUCE (*Lactuca*).—In consequence of the soporiferous and other properties of the lettuce, it ever was, and still continues to be the principal foundation of the universal tribe of salads, which are to cool and refresh. The lettuce, moreover, is so harmless that it may be safely eaten raw even in pieces. Indeed among all the salad materials none are so proper to mingle with any of them, or so wholesome to be eaten alone, as lettuce; and formerly it rarely happened that any other salads were served up at the best tables, with blanched endive, succory and purslain, at which period sugar and vinegar were the constant condiments. Lettuce contains many nitrous particles, is very cooling, and useful in the evening to those who cannot sleep, from the too great heat and circulation of the blood. But the copious addition of oil and yolks of eggs renders it less digestible than when eaten in its simple state; and if those must be used, it is better to add some sugar, which decomposes these substances. The most suitable ingredients of salads, besides the lettuce, are the various cresses, chervil, and the scurvy grass, which, together with other cooling herbs, produce the effects of cleansing the humours, or, as some say, of purifying the blood, and are at the same time diuretic, especially if eaten in spring, and upon an empty stomach. —See *Salads.*

LEVERETS.—The young of hares, than which they are easier of digestion, and are far more preferable.—See *Hare.*

LEVURE.—The yeast and lees of beer, put into canvas bags to drain, and some water added, to assist in carrying off the bitter flavour of the hops. Sent from Flanders to Paris for the use of the bakers.

LIAISON.—A finish with yolks of eggs and cream, for ragouts and sauces.

LIVER.—The livers, especially of animals full grown, are hard of digestion, engender gross humours, and are apt to breed obstructions, although they afford nourishment. The livers of younger beasts, especially during the time they are sucking, are better and moister; and yet they are not exempt from offending weak and delicate stomachs.

LOBSTER.—The lobster is an animal of so extraordinary a form that those who first see it are apt to mistake the head for the tail; but it is soon discovered that the animal moves with his claws foremost, and that the part which plays within itself by joints, like a coat of armour, is the tail. The two great claws are the lobster's instruments of provision and defence; these, by opening like a pair of nippers, have great strength, and take a firm hold by being notched like a saw. Besides these powerful instruments, the lobster has eight legs, four on each side, and these, with the tail, serve to give the animal its progressive motion. Between the two claws is the animal's head, very small, and furnished with eyes that seem like two black horny specks; and these it has a power of advancing out of the sockets, and drawing in at pleasure. The mouth, like that of insects, opens the long way of the body, not cross ways, as with the higher race of animals: it is furnished with two teeth, for the communition of its food; but as these are not sufficient, it has three more in the stomach, one on each side, and the other below. Between the two teeth there is a fleshy substance in the shape of a tongue. The intestines consist of one long bowel which reaches from the mouth to the vent; but what this animal differs in from all others, is, that the spinal marrow is in the breast bone. It is furnished with two long feelers or horns, that issue on each side of the head, that seem to correct the dimness of its sight, and apprise the animal of its danger or prey. Every lobster is an hermaphrodite, and is supposed to be self-impregnated; the ovary or place where the spawn is first produced is backwards, toward the tail, where a red substance is found, when too full for exclusion. From this receptacle there go two canals, that open on each side at the jointures of the shell, at the belly; and through these passages the spawn is excluded and placed under the tail, where the animal preserves them from danger for some time, until they come to maturity; when, being furnished with limbs and motion, they drop off into the water.

When the young lobsters leave the parent they immediately seek for refuge in the smallest clefts of rocks, and crevices, at the bottom of the sea, where the entrance is but small, and the opening can be easily defended. There, without seeming to take any food, they grow larger in a few weeks time, from the mere accidental substances which the water washes to their retreats. By this time also they acquire a hard, firm shell, which furnishes them with both offensive and defensive armour. They then issue from their fortresses, and boldly creep along the bottom in hopes of meeting with more diminutive plunder; the spawn of fish, the smaller animals of their own kind, but chiefly the worms that keep at the bottom of the sea supply them with plenty. They keep in this manner close among the rocks, busily employed in scratching up the sand with their claws for worms, or surprising such heedless animals as fall within their grasp: thus they have little to apprehend except from each other; for in them, as among other sea animals, the large are formidable enemies to the small.

But this life of abundance and security is soon to have a most dangerous interruption, for the body of the lobster still continuing to increase, while its shell remains inalterably the same, there comes on a necessity of getting free. The young of this kind, therefore, change their shell oftener than the old, who remain in the same shell often for two years together. In general, however, all these animals change their shell once a year; and this is not only a most painful operation, but a dangerous one. Their molting season is generally about the beginning of summer, at which time their food is in plenty, and their strength and vigour in the highest perfection. For some days before their change, the animal discontinues its usual voraciousness, it lies torpid and motionless as if in anxious expectation of its approaching change. Just before casting its shell it throws itself upon its back, strikes its claws against each other, and every limb seems to tremble, its feelers are agitated, and the whole body is in violent motion; it then swells itself in an unusual manner, and at last the shell begins to divide at its junctures, particularly at the junctures of the belly. It also seems turned inside out, and its stomach comes away with its shell. After this, by the same operation, it disengages itself of the claws, which burst at the joints; the animal with a tremulous motion casting them off as a man would kick off a boot.

Thus in a short time this wonderful creature finds itself at liberty, but in so weak and enfeebled a state, that it continues several hours motionless. Indeed so violent is the operation, that many of them die under it. Immediately after this change, they have not only the softness but the timidity of a worm.

Every animal of the deep is then a powerful enemy, which they can neither escape nor oppose; and this in fact, is the time when the dog-fish, the cod, and the ray, devour them by hundreds. But this imbecility continues only a short time, for the animal in less than two days is seen to have the skin that covered its body grown almost as hard as before; its appetite increases; and strange to behold! the first object that tempts its gluttony is its own stomach, which it so lately was disengaged from, this it devours with great eagerness; and some time after eats even its former shell. In about forty-eight hours, in proportion to the animal's health and strength, the new shell is perfectly formed, and as hard as that which was but just thrown aside.

When the lobster is completely equipped in its new shell, it then appears how much it has grown in the space of a very few days; the dimensions of the old shell, being compared with those of the new, it will be found that the creature is increased above a third in size.

The creature thus furnished, not only with a new covering, but also a greater share of strength and courage, ventures more boldly among the animals at the bottom, and in its combats often suffers mutilation. A joint, or even a small claw, is sometimes snapped off in these encounters. To come off with the loss of a leg, or even a claw, is no great calamity; the victor carries off the spoil to feast upon at his leisure, while the other retires from the defeat to wait for a thorough repair. This repair is not long in procuring: from the place where the joint of the claw was cut away, is seen in a most surprising manner the renovation of a new claw. This at first is small and tender, but grows in the space of three weeks to be almost as large and as powerful as the old one, but never arrives to the full size; and this is the reason we generally find the claws of the lobsters of unequal magnitude.

Of this extraordinary, yet well-known animal, there are many varieties, with some differences in the claws, but little in conformation. Some are found above three feet long; and if we may admit the shrimp, and the prawn into the class, though unfurnished with claws, it is seen not above an inch. These all live in the water, and can bear its absence for but a few hours. The shell is black when taken out of the water, but turns red by boiling. The most common way of taking the lobster is in a basket or pot, as the fishermen call it, made of wicker-wood, in which they put some kind of garbage for a bait, and then throw it to the bottom of the sea, in six or ten fathom water. The lobsters creep into this for the sake of the bait, but are not able to get out again. The river crawfish differs little from the lobster, but in size, and that it lives in fresh water, and the other only in the sea.

LOBSTERS, To Choose.—If a lobster be fresh the tail will be stiff, and pull up with a spring, but if it be stale the tail will be flabby, and have no spring; this, however, only concerns lobsters that have been boiled, and it is much better to buy them alive and boil them yourself, taking care they are not exhausted by too long keeping. If lobsters have not been long taken the claws will have a quick and strong motion upon squeezing the eye, and the heaviest are esteemed the best. The cock-lobster is known by the narrow back part of his tail: the two uppermost fins within his tail are stiff and hard; but those of the hen are soft and the tail broader. The male, though generally smaller than the female, has the highest flavour, the flesh firmer, and the body of a redder colour when boiled. Those of a middle size are best. Never take them when the shell is encrusted, it is a sign they are old.

LOBSTERS, to Pot.—Take the meat and eggs from the shell; season them with powdered mace, cloves, nutmeg, pepper, salt, and anchovy-liquor. Pound the meat in a marble mortar, and reduce the liquor, by evaporation, to a thick jelly; then put it and the meat together, with about one quarter of its weight of butter; mix altogether, and press it into a small pot; cover it with melted butter. When it is cold, put paper over the pots, and set them in a dry place. Craw-fish, shrimps, crabs, and prawns, may be potted in the same way.

LYMPH.—The liquid contained in the lymphatic vessels.—(See *Lymphatics*). The solid part of the lymph, which may be called *clot*, has considerable analogy with that of the blood. It becomes scarlet red in contact with oxygen gas, and purple when plunged in carbonic acid. The specific gravity of lymph is to that of distilled water as 1022.28 : 1000.00. Chevreuil, a French chemist, analysed the lymph of the dog, and found it to contain:—

Water	926.4
Fibrine	004.2
Albumen	61.0
Muriate of soda . . .	1.1
Carbonate of soda . .	1.8
Phosphate of lime Phosphate of magnesia Carbonate of lime	0.5
Total . .	1000.0

The quantity of lymph in the human body appears to be very great, as the system of the lymphatic vessels forms no small part of it. Its constituent principles appear to be albuminous, water, and a little salt. The lymphatic vessels absorb this fluid from the cellular membrane of the whole body, from all the viscera, and the cavities of the viscera or bowels, and convey it to the thoracic duct (see *Thoracic Duct*), to be mixed with the chyle (see *Chyle*), and ultimately to be converted with the latter into blood, for the support of the animal economy; its use being the superfluous nutritious jelly from every part of the body, to be converted, by the means already stated, into the nature of the animal; and, lastly, the lymph has mixed with it the superfluous, aqueous vapour, which is effused into the cavities of the cranium, thorax, abdomen, &c.

LYMPHATICS.—The name of the absorbent vessels, carrying a transparent fluid, termed lmyph, into the thoracic duct from every part of the body. The lymphatic vessels of the human body are small and transparent, and originate in part of the system. With the lacteal vessels (see *Lacteals*) of the intestines, they form what is anatomically termed the *absorbent system;* and they terminate in the thoracic duct. Their office is to take up, or suck in, substances applied to their mouths: for instance, the vapour of circumscribed cavities, and of the cells of the cellular membrane, are removed by the lymphatics of those parts. And in this manner mercury, and other substances are conveyed into the system when rubbed on the skin.

M.

MACCARONI.—Maccaroni and vermicelli are made of starch beat up with yolks of eggs and dried. These, as well as the different dishes made of flour mixed up with paste, and either boiled in water or stewed in butter, are all calculated for patients and convalescents, to whom they are frequently administered. A paste when it is so inelastic that it can be formed into balls, is extremely difficult to be digested. All unfermented pastry is excessively trying to the stomach; and instead of being a subject of surprise that the lovers of such dainties are continually troubled with indigestion and other complaints of the stomach, it would be against the order of things if they were otherwise.

MACE.—The unctuous membrane enveloping the shell of the fruit whose kernel is the nutmeg. It is of an extremely fragrant, aromatic, and agreeable smell, and of a pleasant, but acrid, and oleaginous taste. Mace is of an astringent and drying nature, and is used as a corrector in cardiac and cathartic compositions. Its general qualities are nearly similar to those of the nutmeg, with the exception of its sitting easier on the stomach.—See *Nutmeg.*

MACKAREL.—The mackarel is a summer fish of passage, that visits our coasts in immense shoals, from the Mediterranean. Being very tender and unfit for keeping, and the periods of its arrival rather uncertain, the legislature on these accounts allow it to be sold publicly on Sundays.

Law ordered that Sunday should have rest,
And that no nymph her noisy food should sell,
Except it were new milk or mackarel.

The form of the mackarel is very elegant, and when alive nothing can surpass the brilliancy or beauty of its colours, which death greatly impairs, but does not obliterate. It loses its life as soon as it leaves the water; and the fresher it is the better. The roe of the male is soft like the brains of a calf; that of the female is full of small eggs, and called hard roe. To make

Mackarel-roe sauce,—Boil the roes of mackarel (the soft roes are best), bruise them with a spoon with the yolk of an egg, beat up with a very little pepper and salt, and some fennel and parsley boiled and chopped very fine, mixed with about half a pint of thin melted butter; mushroom ketchup, walnut pickle, or soy, may be added.

Fennel and Butter for Mackarel,—Wash some fennel very clean, and pick it carefully sprig by sprig; put a tea-spoonful of salt into half a pint of boiling water, boil the fennel about ten minutes, drain it in a sieve, mince it quite fine, and then bruise it to a pulp. For mackarel sauce or boiled soles, some cooks take equal parts of fennel and parsley; others add a sprig of mint, or a couple of young onions chopped very fine.

MADE DISHES.—As this is a very important subject, connected with culinary operations, it may not be irrelevant to lay down some general hints. Under this consideration, it is an important point to take care that all the copper vessels be well tinned, and kept perfectly clear from any foulness or grittiness. Before you put eggs or cream into your white sauce, see that all the ingredients are well boiled, and the whole of a proper thickness, for neither eggs nor cream will contribute much to thicken it. After these are put in, do not stir them with a spoon, nor set your pan on the fire, lest it should gather at the bottom and be limpy, but hold your pan at a proper height from the fire, and keep shaking it round one way, which will keep the sauce from curdling, and be particularly cautious that you do not suffer it to boil; remember to take out your collops, or whatever you are dressing, with a fish-slice, and strain your sauce upon it, which will prevent small bits of meat mixing with the sauce, and thereby leave it clear and fine.—See *Culinary Poisons.*

In browning dishes, be particular that no fat floats on the top of your gravy, which will be the case if you do not properly skim it. It should be of a fine brown, without any one predominant taste, which must depend upon the judicious proportion in the mixture of your various ingredients. If you make use of wine or anchovy, take off its rawness by putting it in some time before your dish is ready; for nothing injures the reputation of a made-dish so much as raw wine or fresh anchovy. Be sure to put your fried force-meat balls to drain on a sieve, that the fat may run from them; and never let them boil in your sauce, as that will soften them, and give them a greasy appearance: to put them in after the meat is dished up is indisputably the best method. In almost every made-dish you may use force-meat balls, mouls, truffles, artichokes, bollines, and pickled mushrooms; and in several made-dishes a roll of force-meat may supply the place of balls, and when it can be used with propriety it is to be preferred.

Browning, to colour and flavour Made Dishes.—Powder four ounces of double refined sugar, put it into an iron frying pan with an ounce of fresh butter, mix these well over a clear fire, and when it begins to froth, hold it up higher; when it comes of a fine dark brown, pour in a small quantity of a pint of port wine, and afterwards the remainder, slowly and judiciously stirring it all the time. Add one ounce of Jamaica, and the same quantity of black pepper, six cloves of shalots peeled, three blocks of mace bruised, three spoonfuls of mushroom, and the same of walnut, ketchup, some acid, and the finely paired rind of a lemon; boil the whole slowly for the space of fifteen minutes and a half, pour it out into a basin till cold, skim it, and bottle it up for use.

It is not an uncommon thing at many tables, where every thing else is done well, to find very indifferent stuffing; no one flavour should predominate too much: a common fault is, that the taste of lemon peel and thyme overcomes all others, they should, consequently, be used in small quantities, and be consistent enough to cut with a knife, but not dry and heavy; herbs are a very essential ingredient, and it is not the copious but judicious use of them that gives to the French cookery its superior eminence in point of flavour.

The principal ingredients in Force-meats, are—Cold fowl, veal, mutton, scraped ham, or gammon. Fat bacon, or the fat of ham, beef-suet, veal-suet, butter, marrow, crumb of bread, parsley, white pepper, salt, nutmeg.

Cold sole, oysters, anchovy, lobster, tarragon, savoury, penny-royal, knotted-marjoram, thyme, lemon thyme, basil, sage, lemon-peel, yolk of hard eggs, yolk and white of eggs well beaten, to bind the mixture.

Mace, cloves, cayenne, garlick, pepper, shalots, onions, chives, chervil, Jamaica pepper finely powdered, or some cloves.

MADEIRA.—The wine thus called is the produce of Madeira, a beautiful and fertile island, situated in the Atlantic Ocean. The wines of Madeira are greatly improved by the heat of the sun, and therefore acquire a considerable augmentation of price, by being conveyed across the Equator previously to their arrival in England.—See *Spanish Wines.*

MADELEINES.—Cakes, made of the same composition as pound cakes.

MAIGRE, (Au). *Au Maigre.*—Soups, &c., dressed without meat.

MALAGA.—See *Spanish Wines.*

MALLOW.—This plant is sufficiently known to need no description. The entire plant, that is, leaves, flower, and root, contains much mucilage, and are demulcent in strangury, catarrh, inflammation of the lungs, and dysentary. The decoction may be taken *ad libitum.*

MALMSEY.—This wine was formerly the produce of Candia, the islands in the Archipelago, and the Morea, in Greece; but is now chiefly brought from Madeira, and some from Spain. It is a sweet wine, of a golden, or brownish yellow colour, and to this is applied an Italian proverb,—" Manna to the mouth, and balsam to the brain." Malmsey is supposed to have received its name from Malvasia, a small island, east of the Morea, a peninsula in Turkey in Europe. The French call this wine Malvoisac. The Duke of Clarence, brother to Edward IV., is said to have been, at his own request, drowned in the tower, in a butt of malmsey.

MALT.—Barley cured, or prepared for making a potable liquor, under the name of beer or ale. Barley is converted into malt by being steeped in water and fermented, and then dried on a kiln, which is a sort of stove so constructed as to admit heat for the purpose of drying any thing.

It is a wholesome and nutritious grain, containing a soft, balsamic, oleaginous essence, highly agreeable to the palate, and healthful to the constitution; but by no means intoxicating, except when used in very large quantities. It may be made from any species of barley soaked in water for two or three days, or until the water turns reddish, then drained, spread about two feet thick on a floor, where it heats, and emits its root or spike: it is then spread thinner for two or three days, then heaped up anew until it heats again, finally dried in a kiln, and the roots separated by screening. Five pounds of spring barley produce about four of malt.

Malt is used to make an alterative, analeptic infusion, and its decoction is fermented to form beer and ale. The exhausted malt left from brewing, called grains, is used in London as food for cows, to whose milk it communicates a peculiar flavour, and a tendency to putresce. Pale malt is the most nutritious, being, from the tender method of drying it, nearest to the original barley-corn. It likewise contains more of the alkaline and balsamic qualities than the brown malt, which, enduring greater heat in the kiln, is sometimes so crushed and burnt, that its mealy parts lose a great portion of its essential salts and vital properties. Amber malt is that which is dried in a middle state between pale and brown, and is now much in use, being the most pleasant and free of either extremes.

Patent malt is kept heated to 430° F., until it acquires a dark chocolate colour. It is used to colour beer: one pound, with seventy-nine of pale malt, gives the colour and flavour of porter.

The *pale malt* is esteemed of all others the most nutritious, as being more closely allied to its original barley-corn, in consequence of being more slowly and slackly dried, by means of a leisure fire, and a sufficient time allowed it on the kiln, and due care taken of it during the whole process. The flour of the grain remains in due quantity, and it produces a greater strength of wort than the brown high-dried malt, consequently it fetches a better price in the market. The *amber-coloured* malt is that which is dried in a medium degree, between the pale and the brown; and is very much used, as being free from either extreme. Its colour is pleasant, its taste agreeable, and its nature wholesome, which is preferred by many, as the best kind of malt. This is brewed by some either with hard or soft water, or with both. The *brown malt* is the soonest and highest dried of any. It is even dried so hard that it is difficult to bite some of its corn asunder, and is often so crusted, or burnt, that the mealy part loses a great deal of its essential properties, which frequently deceives the ignorant brewer, who hopes to draw as much drink from a quarter of this, as he does from the same quantity of the paler or amber sorts. This malt is thought by some to occasion the gravel and stone, as well as the heart-burn; of this, however, there is no truth, though it may not be so healthy to those who are predisposed to, or labouring under, any of these complaints.

Pale and amber malts, dried with coke or culm, obtain a more clear, bright, pale colour than if dried with any other fuel, from the absence of smoke produced with these fuels. Brown malts are dried with straw, wood, and fern. The straw-dried is preferable to that dried with wood, the smoke of which communicates to it an almost insupportable flavour which few can relish; though it is apt to part with it in time, in conjunction with the strength and the great quantity of the hops that are used in its preservation. The fern-dried malt labours under the same inconvenience of the smoke from this vegetable, with which many quarters of malt are dried, on account of its cheapness and plenty.

MALT-LIQUORS.—Having adverted to the different products of malt-liquors, namely, *Ale*, *Beer*, *Porter*, to which we refer, we now propose to offer some observations, founded on general experience, touching the nutritive as well as medicinal properties of these liquors. Fermented liquors drank at proper times, and in moderate quantity, are allowed to be both proper and necessary for those who perform laborious works; but the salutary proportion of these drinks is too apt to be exceeded, when opportunities occur, by people whose gratifications are few in number, and of rare occurrence. As it is impracticable to prevent such excesses altogether, we would suggest that, if they must take place, malt-liquor is found by experience, when good and unadulterated, to be much less injurious to the health and constitution, than distilled or ardent spirits. It was the practice once (whether it be so now or not, to the same extent, we cannot positively say) of farmers, from a principle of economy, to treat their servants, and those with whom they are associated, with spirits and water, instead of malt liquor. Should, however, such a practice now exist, it ought by all means to be discouraged, as spirits are much more inflammatory than malt drinks, and produce more readily obstructions and inflammatory disorders, especially of the liver and mysentery. The temporary delirium of intoxication that they produce, is said to be much more violent and dangerous than that which follows from taking too large a quantity of malt liquor.

A volume, in fine, of useful precepts, might be written on the subject of malt liquor, as it regards the health of those who use it. We shall, however, confine ourselves to a few general observations, intermixed with the results of some scientific experiments, by which the reader who values his health may derive both benefit and information.

Now, the effects of alcohol or spirit, under whatever form it may be taken into the stomach—whether in the form of *Wine*, *Spirits*, or *Malt-liquors*, is, to act upon the nerves, and through the medium of the nerves on the brain, first producing a generous tide of cheerfulness, and gaiety, and hilarity; and secondly, a languid, listless, and not always unpleasant state of weariness, or kind of half-stupefaction. If the potations have been more copious than moderate, the brain and nerves are put upon the stretch, from which they seldom recover, without producing severe head-aches, and uncomfortable sensations about the regions of the stomach and liver. If these potations be often repeated, they come, of course, to produce diseased affections of the nerves, brain, stomach, and liver, which will resist curative means in the exact ratio of the length of time they have existed in the constitution. But if genuine malt liquor be taken in moderation, the gentle excitement it communicates to the nerves will give strength to the body, and rouse the mind to vigorous activity; it will impart health to the blood, and give to the skin all the freshness of youth. In weak and emaciated constitutions, provided there exist no organic affections, the stomach and bowels not deranged, nor the mind fretful, it will often, when taken in small quantities, produce both strength and plumpness. Such are the effects of mere malt spirit, without the addition of hops, or the presence of acid, which will be immediately considered.

The following results of experiments made by Mr. Brande, will enable our readers to judge of the quantities of spirit contained in the different sorts of malt liquors. In Burton ale, he found almost nine parts in the hundred to be spirit; in Dorchester ale, about the same; in brown stout, a little less; in Edinburgh ale, about six or seven parts in the hundred; in London porter, about four or five; and in small beer, only from one to two parts of spirit in the hundred. It hence appears, that Burton and Dorchester ales are by far the strongest in spirit, and that, therefore, they ought to be used in small quantities, and with much caution, while London porter and beer, (so far as the spirit contained in them may be concerned), may be drank in almost any quantity, without much risk or injury.

The hops, which form a principal ingredient in malt liquor, from their strong narcotic quality, tend in some measure, it may be presumed, to allay and keep in check the hilarity of the mind produced by the malt-spirit.—(See *Hops.*) So far, then, our health is in little danger from these ingredients (malt and hops); but it is not so with other accidental, as well as intentional principles; by the first, or accidental, is meant the acid which is always more or less present in all malt liquors, and constitutes the tart flavour called *hardness.* This acid is not an addition of fraud or adulteration, but arises during the fermenting process. When taken into the stomach, it has the effect of leaven; a small portion leavens the whole mass of food and drink in the stomach, and makes it sour, and consequently produces heart-burn, vitiated bile, nausea, headach, and either constipation or a too relaxed state of the bowels, according to circumstances, the quantity consumed, and the strength of the constitution to resist it. It is this acid which is the chief cause of gout, rheumatism, gravel, stone, &c. To avoid these, all malt liquors should be drank as mild as possible, when the deleterious acid is in small quantity. A few grains of the carbonate of soda will correct this acidity; and where any of the consequences arise, some alkaline purge may be taken, as the best remedy.

Capsicum and grains of paradise are used to give a pungent taste to weak beer; but, to avoid detection, the brewers mostly use the concentrated tinctures; and ginger, coriander seed, and orange peel, are used to flavour it: besides these, opium, cocculus Indicus, nux vomica, tobacco, and extract of poppies, are used to increase the intoxicating qualities. Quassia is employed, instead of hops, as a bitter; but as this does not precipitate the mucilage, the beer soon grows muddy, unless kept very cool. Mild, or new beer, is made to taste like stale, by adding a little oil of vitriol, or some alum; and, on the other hand, stale or sourish beer is made to resemble mild, by neutralising the acid by means of oyster shells, chalk, and other alkalious substances.

The presence of the sulphate of iron (see *Iron, Sulphate of)* may be detected in malt liquor, by a strong solution of galls (see *Galls*), which, dropped into the suspected article will turn it of a black colour, and afterwards deposit a black sediment if iron be held in solution; and, which is a much more delicate test, prussiate of potass, or ferro-cyanate of potass, a few drops of the solution of it dropped in the suspected beer, will, if iron be present in the most minute state, give a blue-greenish colour in the menstruum.

When properly fermented, well hopped, and of moderate strength, malt liquors are wholesome, nutritive, and refreshing. It has been observed, that those who drink sound malt liquors, are stronger than those who drink wine; and to those who are trained to boxing, and other athletic exercises, old home-brewed beer is particularly recommended, drawn from the cask and not bottled. Hence Jackson the pugilistic trainer, asserts, that, if any person accustomed to drink wine, would but try malt liquor for a month, he would find himself so much the better for it that he would soon take to the one and abandon the other. Good home-brewed beer has been styled the *Vinum Britannicum*, or British wine—also *liquid bread*. Indeed, it is a subject of much regret that so few families in this kingdom brew their own drink, but put up with the half-fermented, adulterated *wash* formed in public houses, or with the no less adulterated stuff called porter, subject to the frauds of the brewers, and the ulterior sophistications and bad management of the unprincipled publican. Small beer is best calculated for table use, or to allay thirst, being less heating and stimulating than other malt liquors. When drank soft and mild, after being thoroughly fermented and purified, it forms an excellent diluent with food, especially at meals. Sydenham was in the habit of using it in this manner, both at dinner and supper, and he justly considered its being well hopped a great advantage. It is doubtless the best fermented drink that can be used at meals by persons in the middle and upper ranks in life, who are in the habit of drinking wine after dinner. And as it abounds with fixed air, it is the most useful diluent for labourers, because it cools the body, abates thirst, and, at the same time, stimulates, in a moderate degree, the animal powers: but when stale and hard it is unwholesome to everybody.

Sound strong beer is a most useful drink to the weak, the lean, and the labourer, provided they are not very subject to flatulency, nor troubled with disorders of the breast. If taken in moderate quantity, and of the best quality, it will be found of great service to the invalid in restoring his strength and spirits. Bottled beer is always more flatulent than that drawn from the cask.

Strong ale is the most nutritive of all malt liquors, but being digested with greater difficulty than the other sorts, it cannot be taken with such safety but by those who are strong, and who use much active exercise. The best ale is made from fine pale malt, and with hops of the finest quality. It should sparkle in the glass, and the smaller the bubbles the better. Pure ale drinkers are among the healthiest and freshest-looking subjects of our population—such as our country gentlemen and wealthy farmers. On the authority of Sir Lucas Pepys, Edinburgh ale is pronounced to be the superb liquor for those whose constitutions have been weakened by the gout; and the late Dr. Gregory of Edinburgh, recommended it in indigestion, and by its means, with intermediate laxatives, to keep the bowels open; Dr. Marshal Hall has successfully treated many cases of weakness.* In fine,

* In our endeavours to procure a well-brewed and wholesome malt liquor for nutrative and restorative purposes, in certain constitutions, it was our good fortune to be directed to Mr. Barnes', 17, Cullum Street, who keeps some of the best London and Edinburgh bottled ales, porters, &c., in the metropolis—old, pure, and free from every kind of adulteration.—*Ed.*

in some cases of general weakness, where the individual is evidently recovering, and is possessed of a tolerable share of strength and stomach, we have found a little of the finest ale daily to be an excellent restorative.

The age of malt liquors is the last thing by which they are rendered more or less wholesome.* Age, has apparently in this respect, the same effect as hops; and those liquors that are kept longest are evidently the least viscid. But this is generally determined by their degree of strength, in proportion to which, they will sooner or later come to their full perfection, as well as decay; for when ale or beer is kept till its particles are broken, and communicated as far as they are capable, then it is that they are at the highest state of perfection; and beyond this they will be continually on the decay, till the finer spirits have entirely escaped, leaving the remainder sour and vapid.

MALT SPIRIT.—Made by mixing sixty quarters of barley grist ground low, and twenty quarters of coarse-ground pale malt, with 250 barrels of water, at about 17° F. taking out about thirty barrels of the wort, and adding to this ten store of fresh porter yeast, and when the remaining wort is cooled down to 55° adding ten quarters more malt, previously mixed with thirty barrels of warm water, stirring the whole well together, and putting it to ferment along with the reserved yeasted wort. This wash, by the saccharometer, will be found to weigh 28-32 lb. per barrel, more than water. In the course of twelve or fourteen days, the yeast head will fall quite flat, and the wash will have a venous smell and taste, and not weigh more than 2-4 lb. per barrel, more than water. Some now add twenty pounds of common salt, and thirty pounds of flour, and in three or four days put it into the still, previously stirring it well together. It is estimated that every six gallons of this wash will produce one gallon of spirit at 1 to 10 over proof, or eighteen gallons of spirit from each quarter of grain.—*Gray's Supplement.*

In Holland, they first mix ten quarters of rye meal with a small quantity of cold water, and then add as much boiling water as is necessary to make a thin mash, and set it to ferment with a small quantity of yeast; about the third day they add three quarters of malt meal previously mixed with warm water, and as much yeast as at first, stirring the whole well together; this wash weighs only eighteen pounds per barrel more than water, and sometimes less: their stills are from 300 to 500 gallons each, and they draw in the first distillation, three cans of phlegm after the runnings cease to burn on the still head, and five cans when distilling *low wines.*

MANGEL WURZEL (*Root of Scarcity*).—The following account of the mangel wurzel, or root of scarcity, is extracted from a pamphlet, translated from the French of the Abbé de Commerell†, by the late Dr. Lettsom, who, in an advertise-

* Mr. Reynoldson, in his Treatise on Malting, remarks, that when ale was exported to Russia, the more wealthy of the inhabitants of that country selected the most rich as their choicest drink; and they had a peculiar mode of distinguishing its quality; for by pouring a little into the palm of one hand and rubbing it with the other, they, by the odour it emitted, ascertained its goodness. The best, say they, sends forth a rich odour, like an assemblage of flowers; but if any adventitious flavour has been contracted, they could detect it by this method, and then estimated the quality accordingly.

† The Abbé de Commerell observes, when speaking of the general utility of this root, that, "in years of scarcity, it will afford to men a healthful and agreeable food, and, when forage is scarce or dear, will furnish cattle, both in summer and winter, with a cheap and abundant nourishment."

ment prefixed to this pamphlet, observes that in the Midsummer of 1786, a few seeds were given him, said to be those of a dietetic vegetable known in France under the name of the *racine de disette.* As he was then ignorant of its cultivation and qualities,, he planted the seeds in light earth, which was then placed in his hot-house. They vegetated in about a week, and in the space of two months had acquired stalks of the thickness of a goose-quill, when they were transplanted into the open air. Although this was in September, they continued to increase rapidly, and preserved their verdure throughout the winter. In this season he plucked off some of the leaves, and had them boiled for the table; they were of a fine green colour, lighter than spinach, and something like it in taste, with a flavour somewhat resembling that of asparagus. At this period, Dr. Lettsom took up three roots, each about four ounces in weight, which, after boiling, eat very much like parsnips, and had the same shape of the roots.

So much had Dr. Lettsom experienced of the cultivation and use of this vegetable, when the Abbé de Commerell's account of it fell into his hands; a translation of which he immediately procured, and published, in order to diffuse the knowledge of so beneficial an article of diet.

"Though this country," says the Doctor, "does not spontaneously produce any great variety of vegetables proper for the table, yet by the introduction of foreign products, and the arts of culture, it nourishes in its bosom, at this time, the greatest and most useful varieties of fruits, and other dietetic vegetables, in the world. I conceive, however, every additional article of nourishment, especially like this almost incredibly abundant, and at the same time salutary both to the human and brute species, must, like the potatoe which Raleigh brought from America, prove an interesting acquisition to the public. I calculate, from the product of my garden, that a square yard of ground, planted with mangel wurzel, will yield fifty pounds in weight of salutary food; an abundance equalled by few, if any other plant hitherto cultivated in Europe.

"The last winter was unusually mild; during the whole of which, this vegetable retained its verdure, as has been already observed: and as it has never experienced any other winter here, I cannot determine what effect a severe season might produce. I remarked, that the new shoots augmented by plucking the leaves of a preceding growth; and that even the stalks that shot into flower in June 1787, and were accidentally broken off, were replaced by fresh stalks and flowers in the succeeding month; less strong, indeed, but more numerous."

The Abbé de Commerell says, that this root is not known in France, or at least very little. It has no proper name in French, and he has not been able to find a description of it in any botanical work. In Germany, where the greatest advantages have been derived from it, it is called *Dick Ruben* (the Great Turnip); *Dick Wurzel* (the Great Root); and *Mangel Wurzel* (the Root of Scarcity). He uses the last denomination, *the Root of Scarcity*, because it is a literal translation of the name often given to it by the Germans, and because it is expressive of the properties of the plant which it denotes. It might, indeed, be called *the Root of Abundance*, which would be no great deviation from the German name, and which would be expressive of one of the principal properties of this plant; which is, constantly to thrive, and to produce a very great crop, even when other kinds of roots and vegetables fail, and when there is a general scarcity of forage.

This root ought not to be put into the class of turnips, nor into that of carrots; and although by its external appearance, and its seed, it very much resembles the beet-root, it is superior to it in every respect, and appears to form a distinct species. Its culture is so easy, its advantages so numerous, and it will answer so completely the purposes of any other forage, that it seems to him to deserve to be adopted every where, and to have the preference, even in the best years, over all other roots with which beasts are nourished. It may be planted in open fields, and in lanes; it will succeed in all lands, and especially in those that are moist and light. If in hard and clayey grounds it is prevented from making its way far into the earth, it will extend itself horizontally, and it will produce above the surface that which the nature of the soil hinders from being produced beneath it.

This most valuable root is not affected by the vicissitude of the seasons, and has no destructive enemy; the insects and vermin, which make ravages on all other kinds of vegetables, neither touch nor injure it. It is not attacked by blasting or mildew, and the greatest drought does not affect its vegetation; it does not injure the soil that nourishes it; but prepares it to receive, before the winter, the corn and other seeds which may be intended to be deposited in it.

In order to induce persons to engage in the cultivation of a root so valuable, and to cause it to succeed in all hands, the Abbé points out the time and the manner of sowing, transplanting, and cultivating it, and of gathering in the leaves; which succeed each other, without ceasing, in the greatest abundance, and which are highly useful, especially for horned cattle. He then treats of the crop of roots, of the manner of preserving them, and of the method and time of replanting them, in order to obtain seed; in what manner the roots are to be prepared for nourishing and fattening large cattle, and even for rearing young calves, that the owners are desirous of weaning soon after their being calved. But for these particulars we must necessarily refer to the pamphlet itself. In the mean time, we shall extract some farther observations respecting the peculiar excellencies of this root.

Oxen, cows, and sheep, readily eat the leaves, they nourish them, and they are even fattened by them. They are given to them entire, as they come from the field. Poultry will eat them, when cut small, and mixed with bran. Even horses will like these leaves very well, and may be fed with them during the winter. Nothing more is necessary for this purpose, but to cut them small, with a proper instrument.

Milch cows, and which is intended to continue as such, may, without the least inconvenience, eat of these leaves, for their whole nourishment, during eight, and even to fifteen following days. From the very first days, they will give a greater quantity of milk, and cream of the very best quality; but if they should be continued to be fed with this forage only, it would soon be apparent that they fattened at a surprising rate; in a short time the milk will diminish, and the substance turn entirely to fat. These leaves produce the same effect on sheep and oxen; from whence a judgment may be formed of the great facility with which they may be fattened, by this species of nourishment alone.

The leaves of this root will also afford to men a wholesome and agreeable food; they have not an earthy taste, like beets; their taste resembles that of the *Cardon d' Espagne*, and they may be eaten in the same manner. They may be dressed in different ways; they are considered as a kind of spinach, and are preferred to it by many persons; they may be eaten from the spring to the month of November; by their continual re-production, and great abundance, they are highly useful to farmers, to country people, and in all houses in which there are many servants. The roots, when dressed, they may eat themselves in the winter; and they may be dressed many ways. The root of scarcity is a very good root, of an agreeable taste, much superior to the red beet, and at least equal to the turnip.

Besides these advantages, the root of scarcity also possesses many others; particularly, the certainty of an abundant crop, however intemperate may be the seasons.

If this root be cultivated, it will not be necessary that cattle should pasture in the meadows, and eat the produce of them during the summer; but all the grass which the meadows produce, may then be converted into hay. How much, indeed, may they not sell of it, since, even during the winter, they may at least save two-thirds of it? And, in short, as the root of scarcity will render it easy to feed beasts in the stable during the whole year, this circumstance will also greatly increase the quantity of dung, which is so necessary in agriculture.

In consequence of these advantages, forage may always be kept at a moderate price; for this root yields a much greater produce than other kinds of forage, and surpasses them even in those years in which they are the most favourable. When this root is become sufficiently known, cultivators will undoubtedly prefer it to all the other kinds of forage.

"The numerous experiments," concludes the Abbé, "that I have made, especially in the year 1785, relative to the culture, the produce, and the use of the root of scarcity, have convinced me, that it deserves to obtain a decided preference over all other roots, and even over turnips. Whether I am partial, or enthusiastic in my attachment to it, may be determined by considering the reasons which I am now about to enumerate."

Recapitulation.

1. This kind of root may be eaten by men during the whole year: it is agreeable and wholesome, and does not cause flatulencies, as turnips do.

2. As the root of scarcity is not attacked by the caterpillar, or by any other insect, its success is certain every where: it suffers nothing from the vicissitude of the seasons. Neither our own turnips, nor those of England, possess these advantages.

3. The leaves of the root of scarcity afford an excellent food for all kinds of cattle, during four months in the year; whilst turnips produce leaves only once a year, and even then are tough, and injured by insects.

4. The root of scarcity may be well preserved during eight months in the year, and is not subject to become rotten, as is the case with turnips; which, from the end of March, become stringy, tough, and pongy.

5. There is no kind of turnips which ever succeeds perfectly; they often fail entirely, especially in hard lands; they require a light, good, and sandy soil; but the root of scarcity will succeed every where; the cultivators of different kinds of lands may be equally assured of success; and farmers and labourers may be greatly benefited by this resource.

6. The milk produced by cows who have been nourished for some days together with turnips, contracts a taste like tallow, or strong, sour, and disagreeable; but those who are fed with the root of scarcity, produce both milk and butter of an excellent quality.

This excellent forage will afford subsistence to all kinds of cattle, and especially at that time when grass, so useful and necessary to cattle, is yet scarce; and it will be seen, by their vigour and their sleekness, how much it has contributed to their health.

"The root of scarcity is never disliked by cattle; they eat it always with the same avidity, and the same pleasure; and they have nothing to fear from those unhappy accidents, which sometimes result from the use of turnips. How much is it to be wished that these united advantages, which are founded upon constant experience, may destroy that distrust, and those prejudices, which this new root may, perhaps, at first inspire among the French; for it is only in some provinces in Germany, in which it is cultivated with the greatest success, that the preference is given to it over every other kind of fodder, and in which it is employed for fattening the greater part of those herds of cattle, which are every year brought for sale into this kingdom.

"I shall esteem myself happy, if the truths which I have stated should encourage the cultivation of a root, which may increase the riches of the state, and contribute to the ease, and to the happiness of the people."

MANGO.—The fruit of a large tree, growing in the Isle of Java, and other parts of the East Indies; but according to Major Campbell, Goa produces the best mangoes in the world (see *Journey*, part 111, p. 23). They are brought into Europe either candied or pickled. In the latter case they are opened with a knife, and the middle filled up with fresh ginger,garlick,mustard and salt, with oil or vinegar. This fruit when ripe, is eaten by the natives, with or without wine, or macerated in wine. The bark and gum of the tree are also used medicinally: and the stalks calcined are said to take away warts.

MANNA.—The concrete juice of the ash, growing in Sicily and the southern parts of Europe. Briançon manna is esteemed the best. A similar juice may be obtained from the larch tree. It exudes from every part of the tree; but for a more abundant supply, incisions are made through the bark, whence it flows more freely, and is soon inspissated by the sun's heat. The whitest, lightest, purest, dryest, and that which has a crystalline appearance when broken, a sweet taste, and rather biting to the tongue, is to be preferred. This is called flake manna, to distinguish it from a coarse common sort. It contains much saccharine principle, mucilage, and aroma. It is a medicinal drug of great use in common practice as a gentle purgative, from one ounce to one and a half; it is, however, by no means, alone, a good purgative for adults, although it enters very well into combinations. It is very useful for children who are habitually costive, where there is not much glairy matter containing calomel. With an equal quantity of the oil of almond, and the addition of a little water, it forms an useful emulsion in cases where opium is necessary, as it prevents costiveness in the teething and pulmonary complaints of children.

Manna is classed among the number of gums. The peasants of Mount Libanus, in Syria, it is said, eat manna ordinarily, as others do honey; and at Mexico they have a manna which they eat as we do cheese. It is sometimes counterfeited by compositions of sugar, honey, and purgative materials.

MANNA-GRASS. (*Festucca fluitans*).—So called in Germany and Poland, because its seeds have a remarkably sweet and agreeable taste, particularly before the plant comes to its full growth. It excels in richness and nutriment all the other vegetable productions in Europe; and, boiled in milk, it affords excellent soups as well as puddings. Two ounces of this manna, properly cooked in milk and water, would be a sufficient meal for the most robust and laborious man. Boiled in water alone, in the proportion of one ounce to three pints of water evaporated to one quart, with the addition of some sugar and white wine, it makes an agreeable and nourishing diet for lying-in women and other patients for whom animal food is improper, and whose situation requires the occasional stimulus of wine.

MARINADE.—A prepared pickle for meat, &c.

MARJORAM, (*Origanum*, L.)—There are four different species of marjoram cultivated, all of which grow in gardens: namely, the pot, sweet, winter, and common; all of which, but especially the first three, are aromatics of sweet flavour, much used as relishing herbs in soups, broths, stuffings, &c. The young, tender tops and leaves, together, are used in summer in a green state; and they are dried for winter.

Marjoram is cephalic, fortifies the nerves, and comforts the brain. The powdered herb is used as snuff in affections of the head; and the leaves as fomentations. It is also used in certain cases to give animal substances a higher flavour. It increases the animal spirits, though when used to excess, it produces heat and raises the pulse. It agrees in cold weather with melancholy and phlegmatic constitutions, and such as have a difficult or laborious digestion.

The tops of all sorts of marjoram are to be gathered, for summer use, when they are in full bloom, in July or August, for preservation through the winter.

MARROW.—The marrow of animals, used in moderation, is nutritious and strengthening. If used too freely by weak and impaired stomachs, it blunts the appetite and deranges the stomach. Marrow puddings are esteemed a great luxury; and when properly made, are certainly an exquisite dish for strong digestive organs, though it is by no means adapted for the sick or convalescent.

MARSH-TREFOIL, Buckbean, or Bogbean, (*Menyanthes trifoliata*).—A plant with large oval leaves, pointed at each end like those of the garden bean, set three together as long pedicles, which embrace the stalk at some height, and, there parting, they leave it naked to near the top, where issues forth a short spike of pretty large reddish-white monapetalous flowers, each of which is cut into five segments, hairy on the inside, and followed by an oval-seeded vessel. It is perennial; is exceedingly common in most places, and flowers in May. The leaves have a bitter taste, which they impart to water and spirit. It is said to cure the rot in sheep.

Of all the mild and excellent tonics and stomachics, it is one of the best: the infusion creates an appetite, strengthens the digestive organs, and gives a sensation of strength to the whole system. In want of appetite from mere want of tone, nervous headach, intermittents, &c., it is very useful, and particularly in scurvy. Boerhaave relieved himself of the gout by the fresh juice mixed with honey. And a drachm of the powder two or three times a day has expelled worms; but every tonic that gives vigour and strength to the intestines will do the same, namely, act as an anthelmintic. It has been employed in the place of hops, openly, on the Continent, and privately (at one time) as has been said, in this country. The leaves were collected when mature, and dried in the shade to preserve their colour. They were then boiled and skimmed, to free them from their excess of roughness; and the remaining extract was preserved and put into the fermenting tun in such proportions as the brewer judged proper, or as his druggist chose to direct. These leaves have very nearly the flavour of the hop; and an ounce of the former is said to be equivalent to half a pound of the latter. It should be observed, however, for the guidance of any one who shall dare to use them, that, although they stand recommended in the modern Pharmacopœias, the quantity of a drachm taken in powder " purges and vomits"

MASK. — In the culinary art, mask implies to cover completely.

MASTICATION. — The act of chewing the food. The aliment being taken into the mouth is retained there, and brought under the action of the teeth by the lips, buccenator muscles, and tongue. By the lateral motions of the lower jaw, the inferior molar teeth grind the alimentary substance against the upper ones. During this time, the food becomes mixed with the saliva and mucus of the mouth, which convert it into an easily swallowed bolus, and also fits it for future digestion and assimulation.

MEAD.—A wholesome, agreeable liquor, prepared with honey and water. Mead is a liquor of very ancient use in Britain, and some persons consider the best sort scarcely inferior to foreign wine. It is thought probable, that before the introduction of agriculture into our island, mead was the only strong liquor known to the inhabitants and their posterity, long after they had become acquainted with other liquors.—See *Metheglin*.

MEAT.—Directions for Carving different Joints, &c. of Meat.

1. *The Itch or H Bone.* (See p. 53). —The outside of this joint is very much influenced in its flavour from the water in which it is boiled; a thick slice must, therefore, be cut off the whole length of the joint, cutting it all the way even, and through the whole surface; the soft fat, which resembles marrow, lies on the back, and the firm fat must be cut in thin horizontal slices; but as some people are fond of the soft, others of the hard, it would be proper to ask them which they prefer. The upper part, as it is generally placed in the dish, is the handsomest, fullest of gravy, most tender, and is enriched with fat; yet there are some people who prefer a slice on the under side, though it is quite lean.

2. *Sirloin of Beef.*—With respect to the carving of this joint, it is immaterial whether the whole or only a part of it be brought to table. The meat on the upper side of the ribs is firmer, and of a closer texture, than the fleshy part underneath, which is by far the most tender, and of course preferred by many people. To carve this joint, the different tastes of people must be consulted, and each person helped to that part which is most agreeable to them. Some begin to carve it at the end, first cutting off the outside; while others begin in the middle of the most fleshy part. The slices must be cut neither too thick nor too thin.

3. *Brisket of Beef.*—This part is always boiled, and is to be cut the long way quite down to the bone, after having cut off the outside, or first cut, to which you must never help any one, unless they desire it, which is seldom the case. The fat cut with this slice is of a firm, gristly kind, though one of a softer nature may be found underneath.

4. *Buttock of Beef.*—This part is always boiled, and requires few directions as to the manner in which it ought to be carved. A thick slice should be taken off all round it. When you come to the juicy and prime parts of it, you must be careful to cut it even, that it may have a graceful figure, should it be brought up again the next day to table.

5. *Ox Tongue.*—This must not be cut long ways but across, and in the thickest part, and taken from thence in slices; the most tender and juicy part is about the middle, and near the root, for towards the tip the meat is both closer and drier. A tongue is generally eaten with white meat, veal, chicken, or turkey; and whenever you help any person to the one, you must also help them to the other.

6. *Breast of Veal.*—A breast of veal must be cut across quite through, dividing the gristly from the rib-bones; this is called cutting the brisket from the ribs; the brisket may be cut into pieces as wanted, for some prefer this part to the ribs. It needs no particular directions how to separate the ribs, since all there is to do is, to put the knife in at the top between any two, and continue downwards till they be separated. Remember to give a piece of the sweet-bread to every one you help, as that is reckoned an epicurean morsel.

7. *Knuckle of Veal.*—This is always boiled, and much relished on account of the fat, sinewy tendons about the knuckle, for if it be lean it is not worth dressing; you can hardly cut this joint amiss, though it is usual to begin in the thickest part, from whence some fine slices may be taken. The bones about the knuckle may be easily separated at the joints, and afford delicate picking.

8. *Fillet of Veal.*—This is the thigh part, and is the same part in the calf as that which is called the buttock in the ox. Many people esteem the outside slice of a fillet of veal a great delicacy, because it is most savoury; but every one does not think so; the question should therefore be put, before you help any one to it. If no one choose the first slice, lay it in the dish, and the second cut will be white meat, but take care to cut it even, and close to the bone. A fillet of veal is usually stuffed under the skirt or flap, with a pudding, or force meat; into this you must cut in a line with the surface of the fillet, and take out a thin slice; this, and a little fat cut from the skirt, must be given to each person at table.

9. *Calf's Head.* — Calf's head, boiled, is an elegant dish, and affords many delicate bits; when young it is perfectly white, and the fat very fine; it must be cut quite along the cheek bone, in the fleshy part, from whence many handsome slices may be taken. In the fleshy part at the end of the jaw bone lies part of the throat sweet bread, which is esteemed the best part of the head. Many people are fond of the eye, which must be cut from the socket, and cutting quite round, keeping the point of the knife slanting towards the middle, so as to divide the meat from the bone. Though the eye of the calf's head is seldom divided, yet if the company be large, you may cut it in half, and so make it serve two people. The palate is also much esteemed by some people, and is found on the under side of the roof of the mouth; it is a crinkled, white, thick skin, and may be easily separated from the bone by the knife, by lifting up the head with your left hand. When you serve any person with a slice of the head, you must inquire whether they choose to have any of the tongue or brains, which are generally served up in a separate dish; a slice from the thick part of the tongue, near the root, is best.

10. *Leg of Mutton.*—A leg of mutton whether boiled or roasted is carved in the same manner, though there are two methods of cutting it; some cut it longways, but the most general method is to cut it across in the thickest part, quite down to the bone, dividing the gland called "the Pope's eye," of which many gourmands are extremely fond. The most juicy parts of the leg are in the thick part of it, but many prefer the drier part of a leg of mutton, which is about the shank or knuckle, called by some venison, though it is certainly the coarsest part of the joint. A leg of wether mutton, which is generally the best flavoured, may be easily known by the kernel—a little round of fat at the top of the thick part. The meat about the cramp bone, is esteemed a delicate morsel.

11. *Shoulder of Mutton*—This joint has not unfrequently been salted and

boiled by whimsical gourmands, but it appears oftenest and is most familiar to us in a roasted form; it is a joint very full of gravy, and much more so than the leg, on which account it is preferred by many people. There are also a variety of nice cuts in it: it must be cut in the hollow part, and the knife should go down to the bone. The gravy then runs fast into the dish, and the part cut opens wide enough to take many slices from it; the best fat, which is full of kernels, lies on the outer edge, and is to be cut in thin slices. If there be many at table, and the hollow part of the joint be all cut away, some good and delicate slices may be taken from each side of the ridge of the bladebone; on the under side of the shoulder are two parts very full of gravy, and which many people prefer to those of the upper side, the parts about the shank are coarse and dry, as about the knuckle in the leg, yet by some they are preferred to the more juicy parts.

12. *Saddle of Mutton.*—A saddle or chine of mutton, consists of two undivided loins, the back-bone running down the middle to the tail. In carving this you must cut a long slice on either side of the fleshy parts. There is seldom any great length of the tail left on; but if it be sent up with the tail, many will be fond of it, and it may be easily divided into several pieces, by cutting between the joints of the tail, which are about an inch apart.

13. *Fore-quarter of Lamb.*—This joint is always roasted; and when it comes to table, before you help any one, you must separate the shoulder from the breast. The shoulder being thus taken off, a lemon or orange should be squeezed upon the part, then sprinkled with salt, where the shoulder joined it, and the shoulder should then be laid on it again; but if the fore-quarter be grass lamb and large, the shoulder should be put into another dish, when taken off, and cut up in the same manner as a shoulder of mutton. The gristly part must then be separated from the ribs, and then all the preparatory business will be done. The ribs are generally most esteemed, and one or two may be easily separated from the rest. Each person at table should be asked which they prefer, the ribs, the gristly part, or the shoulder.

14. *Spare-rib of Pork.*—A sparerib of pork is carved by cutting out slices in the thick part at the bottom of the bones. When the fleshy part is cut away, the bones, which are esteemed very sweet picking, may be easily separated. Very few people admire the gravy of pork, it being too strong for most stomachs.

15. *Hams.*—There are three methods of carving a ham; some begin at the knuckle, some at thick end, and others in the middle, which is perhaps the best method, as you then come at once to the prime of the meat; be careful to cut it thin, and by no means in thick and clumsy pieces.

16. *Roasted Pig.*—A pig is seldom sent whole to table, but cut up by the cook, who takes off the head, splits the body down the back, and garnishes the dish with the chaps and ears. Before any be helped, separate the shoulder from the carcass, and then the legs. The most delicate parts of the pig are about the neck; the next best parts are the ribs; but in a young pig there cannot be many coarse bits. Some are fond of an ear, others of a chap, and may consequently be all pleased at an easy rate.

17. *Haunch of Venison.* — First cut it across down to the bone, at some little distance from the knuckle; from the middle of that cut, take another stroke as deep as you can the lengthways, so that the two strokes will then form something like the letter T; you may then take out lengthways as many slices as you please. Slices of venison should not be cut thick, nor yet too thin, and

some fat, and plenty of gravy, should be given with them. Currant jelly should always be on the table, for those who choose it.—See *Butchers' Meat*.

MEDLARS.—There is a strong resemblance between medlars and sorb apples; they ripen in the same manner, and possess the same properties. Medlars, however, are more astringent than sorbs, and the riper they are the more this astringency diminishes. The leaves and flowers of medlars are also astringent, and are used in decoction as gargles, in disorders of the throat. Eaten to excess, medlars do not easily digest; they encumber the stomach, and retard the digestion of other aliments. In winter they agree with young people of a bilious constitution, and with such as have a weak stomach. They are reputed by the older writers to prevent intoxication, check vomiting, and diarrhœa. They are also reputed good for diminishing and expelling urinary calculi. Those that are full, ripe, large, and pulpy, have the most sweet and agreeable taste; consequently are the best.

MELONS.—A species of cucumber, though melons are more aromatic, and, in this respect, more wholesome. Water melons, however, require more spice and wine than musk melons, as they partake still more of the nature of cucumbers. Melons, eaten after supper, are said to have caused the indigestion that proved fatal to George I., who expired in his carriage, on the 21st of June, 1727, O.S. at a short distance from Osnaburgh, in Germany. There is a great variety of this fruit cultivated in different parts of the world, but that sort called the Canteloupe melon, so called from a place near Rome, whither it was brought from Armenia, a country west of the Caspian Sea, in Asia, is in the greatest esteem among the curious.

"The water melon," (*C. citrullus*), says Dr. Shaw, "is, doubtless providentially calculated for the southern countries, and affords a cool, refreshing juice, assuages thirst, mitigates feverish disorders, and compensates thereby, in no small degree, for the excessive heat. In Moldavia, a district in Turkey in Europe, the abundance of melons, and the fruit of the strawberry-tree, make up for the scarcity of good water. Melons are sometimes carried to very distant places. Sir John Chardin ate, at Surat, melons that had been sent from Agra. The best, he says, grow in Korassan, near Little Tartary, whence they are carried to Ispahan, for the king, and to make presents of.—(See *Harmer's Observ.* vol. iii, p. 181). And Mr. Coxe (*Trav.* vol. i, p. 255) says that a small sort of melon, of exquisite flavour, is sent from Astracan to Moscow, a distance of a thousand miles. The fruit is large, green externally, white fleshed, reddish towards the centre, succulent and refreshing, but not high-flavoured. It is generally considered as the melon of the Jews, mentioned in various parts of the Bible.

METHEGLIN.—A species of mead, prepared from honey boiled with water, and fermented; and one of the most pleasant and general drinks that the northern parts of Europe produce, and much used among the ancient inhabitants.

"The juice of bees, not Bacchus, here behold,
Which British bards were wont to quaff of old;
The berries of the grape with Furies swell,
But in the honey-comb the Graces dwell."

From the custom of drinking a beverage made with honey, for a thirty days' feast after a wedding, comes the expression *honey-moon*, a phrase derived from the Teutones, an ancient people who inhabited the northern parts of Germany, not to be found in the warm wine latitudes. It is said that Attila, king of Hungary, notorious for the horrible ravages that he committed both in Gaul and Italy, drank so freely of hydromel (a kind of mead, or metheglin, as the word imports) on his wedding-day, that he was found suffocated at night; an event which occurred in the year 453; and with him expired the empire of the Huns.

MILK.—As occupying a middle rank between animal and vegetable food, we shall here notice milk and its various products, and treat of each under its respective head.

Milk is the proper and natural food of the young of all animals of the mammalia class; and cow's milk constitutes a principal part of the daily diet of a great proportion of the human race, both in the infant and in the adult state. In consequence of the great abundance of oily and cheesy matter contained in milk, the milk of cows is by no means so well adapted to infants as human milk; but as the mode of living in civilized society often depraves the quality of women's milk, or prevents its due secretion, cow's milk, in too many instances, becomes a necessary substitute. On such occasions, as it is too heavy to be given alone, it should be diluted with water: and as it is disposed to become more ascescent than human milk, and from that cause to produce griping and other disorders in the bowels of young children, it will be often useful to mix with it decoctions of animal substances, such as chicken or veal broth, or decoction of hartshorn shavings; of which last two ounces should be boiled in a quart of water, over a slow fire, till the whole be reduced to a pint; when, after it has become cold, it will be of the consistence of a light jelly. This, mixed with about twice its quantity of cow's milk, with the addition of a little sugar, forms for young subjects a proper aliment, approaching nearly to the nature of human milk.

Milk is of very different consistence and properties, not only according to the various kinds and species of animals, but also in the same species, in consequence of the difference of feeding, constitution of body, age, time of milking, and other circumstances. Among the articles of nourishment, milk takes the lead. It affords the best nutriment to persons whose lacteals and blood-vessels are too weak for deriving nourishment from other provisions; because it is already converted into an alimentary fluid in the intestines of an animal. Nature having appointed this bland fluid for the food of children, who, on account of their growth require much nourishment, it may hence be concluded that it is easily digested by healthy stomachs. Milk-porridge, as well as those dishes in the composition of which milk and flour are used, have a manifest tendency to obstruct the lacteals or milk-vessels of the intestines and the mysentery, a circumstance which renders them completely unwholesome, particularly to children.

Though an animal substance, milk does not readily become putrid; and being possessed of the power of vegetable aliment, it sooner turns sour than putrid. It affords a substantial alimentary fluid; and hence it is of service to persons weakened by dissipation or disease. As the milk of animals contains more cream than that of the human breast, it ought to be diluted with water when given to infants. It combines both saccharine and oily particles, and is a very serviceable article of diet, in a putrescent state of the blood, in inveterate ulcers, and in the scurvy. It is well calculated to assuage rigidity, cramps, and pains, being a diluent and attenuating remedy, especially in the state of whey; it promotes perspiration and evacuation in general, and is highly beneficial in spitting of blood, hysterics, hypochondriasis, dysentery, inveterate coughs, convulsive affections, the putrid sore throat, and in complaints arising from worms. It is also used for fomentations, baths, emollient injections, and washes for inflamed parts. If intended as a medicine, it should be drunk immediately, or soon after it comes from the cow, because, through boiling, and even by long standing, the best and most nutritious balsamic particles evaporate.

Milk is used in consumptions, especially in their early stage. In gouty affections, after the paroxysm has subsided; in small-pox, diluted with water, as common drink; in measles, particularly the malignant kind, diluted in the same manner; in cases where mineral and animal poisons have been swallowed — in strangury and dysury, from the absorption of cantharides after the application of a blister; in fluor albus, syphilitic affections, and in many spasmodic and nervous diseases. It is generally improper in inflammatory fevers, unattended with pustulous eruptions, in bilious fever, cases of scrophula, rickets, &c.

When milk is used medicinally, it is often serviceable to dilute with Pyrmont, Seltzer, or some other proper medicinal water; and to prevent acidity, as well as to make it sit easier on the stomach, lime-water, and some of the distilled aromatic waters, are occasionally mixed with it. To obviate costiveness, which milk is apt to induce, it is often proper to mix brown sugar or magnesia with it, or to boil it with oatmeal, veal broth, &c.

The milk to be employed for diet in diseases ought to be taken from healthy and well-nourished animals; for we see in children how much depends upon the health of the mother, and how suddenly they suffer from an unhealthy and passionate nurse. In spring and summer, milk is peculiarly good and wholesome, on account of the salubrious nourishment of the herbs. In winter it is much inferior. It is further necessary that the animal furnishing the milk should be kept in the free air, and have daily exercise. In order to obtain good milk, it would be adviseable for private families who have the opportunities, to keep a cow; for besides the adulteration of that which is sold, cows are frequently milked at an improper time, by which the milk is much injured, and cannot be wholesome. The best milk is obtained from the cow at three or four years of age, about three months after producing the calf, and in a serene spring morning.

Good cow's milk ought to be white, without any smell; and so fat, that a drop being allowed to fall on the nail will not scatter in divisions. It is lighter, but contains more watery particles than the milk of sheep and goats; while, on the other hand, it is more thick and heavy than the milk of asses and mares, which come nearest the consistence of human milk. Ewe's milk is rich and nourishing; it yields much butter which, however, is so unsavoury that it cannot be eaten. Both this and goat's milk produce much cheese, which is tough, strong, pungent, and difficult to be digested. As goats are fond of astringent herbs, their milk is superior in strength to that of other animals, hence it has been sometimes used with the most happy success in hysteric cases. Goat's whey and asses milk are chiefly used in pulmonary complaints; and where asses milk cannot be procured, that of mares may be used as a substitute.

Milk consists of caseous, butyraceous, and watery parts; that which contains a well-proportioned mixture of the three, is the most wholesome. But this mixture is not always met with in due proportions—frequently the two first, namely, cheese and butter, predominate; and in this case it affords indeed a strong food, but is difficult of digestion. If the water forms the greatest proportion, it is then easily digested, but less nourishing. This is particularly the case with asses milk, which more than any other affects the urine and stool, while it has a tendency to purify the blood.

On account of the warmth, and the mechanical process of the digestive organ, joined to the chemical properties of the acid generated in it, milk necessarily coagulates in every stomach. The caseous part is dissolved, and diluted by the admixture of the disgestive liquors, and thus prepared for being changed into a pure chyle or milky fluid. Indeed, it makes but very little difference, whether we take cream, cheese, and whey in succession, or whether we consume them united in the mass of the milk: in the former case, the separation takes place without, and in the latter within the stomach. It is, however, improper to eat acid substances together with milk, as this mass would occassion fermentation and corruption; while on the contrary, the natural coagulation is only a separation of the constituent parts, not a transition of this mild fluid into the stage of acid fermentation; for this is prevented by the saponaceous digestive liquors, though the milk itself be coagulated. Yet milk is not a proper food for the debilitated in all cases; nay, indeed, under certain circumstances, it may even be hurtful. For instance, it does not agree with hypochondriacs, as it occasions cramp of the stomach, cholic, heartburn and diarrhœa. It disagrees also with the plethoric, the phlegmatic, and the corpulent; but particularly with tipplers, or those addicted to strong spirits. The butyraceous and caseous parts may obstruct digestion and oppress the stomach. And *some milk* is unfit for use, on account of the chemical decomposition which has taken place in its constituent parts, and because it can hardly be digested by the most powerful stomachs: even sweet milk ought not to be eaten together with flesh, and in most cases the whey is preferable to the milk. With these exceptions, milk may be pronounced an excellent species of diet, which does not require strong digestive organs, unless a variety of other substances be eaten with it. On the contrary, persons much reduced in bodily vigour have received benefit, and in a great measure been cured, by a milk diet alone. We daily observe children at the breast, with the natural disposition to acidity and viscosity, feel its bad effects only, when, together with milk, they are fed upon cakes, pastry, gingerbread, and other trash. Milk being free from all acrimony, produces wholesome, light, and sweet blood. Sugar and salt are almost the only proper spices to be added to it.

The following are the principal products and preparations of milk in dietetic and medicinal use: e. g.

Butter, Cream,
Cheese, Curds,—which see.

Butter-milk is a species of whey, but contains a great number of butyraceous particles. If it be drunk while new and sweet, it is refreshing and cooling.

The Persians, and other inhabitants of the East, prepare a kind of wine from milk, which possesses all the properties of intoxicating liquors; although it is suspected that they make some addition to the sweet whey, after the caseous parts are separated from it, by which they induce a vinous fermentation. Whether they add honey, sugar, or any mucilaginous vegetable, containing the saccharine principle, we shall not attempt to decide; but it is well known, that the Chinese ferment and distil a liquor from a mixture of rice and veal, which is not unpleasant when new.

MILLET.—Hirse or Millet, is inferior to either oats or barley; it possesses too crude a mucilage to relaxed or inactive stomachs. The common millet is grown on the Continent as a garden plant for its seeds to be used as a substitute for rice; the Polish millet, *(Digitaria Sanguinalis)* is grown for this purpose in the cottage garden of Poland; as is the carnation poppy *(papaver semniferium)*, for its seeds, which form a seasoning to buck wheat porridge.

MINT. (*Mentha*). — There are three species of mint cultivated in gardens. The principal are, 1. *The peppermint*, (*M. Piperita*, L.) which may be easily distinguished by its subcamphorated odour, and blackish purple flowers, which appear in August and September. It is found in watery places. It is almost entirely reserved for distillation, for which purpose it is extensively cultivated in low, rich, soft, marshy lands, especially such as can be irrigated and flooded.

2. *The Spearmint* (*M. Viridis*).— This sort rises from two to three feet high, with sessile, lanceolate, naked leaves; the whole plant has a reddish green hue, is occasionally found in marshy situations, and flowers in August. There is a narrow and a broad-leaved variety. The young leaves and tops are used in spring salads, and form a flavouring ingredient in soups. They are also employed to give flavour to certain dishes, as peas, &c., being boiled for a time and then withdrawn, in the manner of garlick. This species is somewhat weaker than peppermint.

3. *The Penny-royal Mint (M. Pulegium*).—This is a trailing plant, with small, smooth, ovate leaves. It is indigenous in watery pastures and places subject to inundations. It flowers in September. It is used in different branches of cookery, and also for distilling pennyroyal water.

It is warm and grateful to the stomach, quickly expelling wind, and taking off sickness and disposition to spasm. The infusion may be drunk *ad libitum*.

MOORHENS.—The moorhen is a water-fowl, with a slender body, small head, feathers of various colours, long black bill, a little crooked, the tail short, and legs rather long, which enable it to explore the water with ease in quest of food. The moorhen does not swim so easily as other water-fowls. They live upon small fish, little worms, insects, plants, and other things, both out and in the water.

When young and fat, moorhens are served up to the first tables, though they are not all good alike. There are some of them that taste of the mud and fish on which they feed—others again have an exquisite flavour. From these birds feeding on the grossest substances, their flesh is also full of gross juices, still nutritous enough as a solid food, and fit for those who have strong stomachs and good digestion.

MULBERRIES.—There are two sorts of mulberries, the white and the black, the first of which is not used in foods. They are good to qualify the sharp humours, to quench thirst, to allay evacuations upwards and downwards; they create an appetite, and provoke the salivary discharge; before they are ripe, they are detersive and astringent; and are not unfrequently used as gargles for diseases of the throat. They produce flatulency, and do not agree with people predisposed to colic. The large, plump, and full ripe ones, gathered before the sun rises, are the best; and in such condition will be found to have a sweet and agreeable taste, and not injured by insects. They agree, in hot weather, with young, bilious, and sanguine people.

The poets gave the mulberry-tree the epithet of prudent, because it does not begin to bud till the sharpness of winter is quite gone. In short, it does not bud till the month of May, and bears no fruit till August and September. Horace makes an eulogium upon mulberries, and recommends the gathering of them before sun-set.

> "Ille salubres
> Æstates peraget, qui nigris prandia moris
> Finiet, ante gravem, quæ legerit, arbore solem."

The bark and root of the mulberry-tree are detersive and aperient. When mulberries are but young, they are bitter and harsh, and afterwards become sweet and pleasant, in the same manner, and for the same reason as grapes, which are at first harsh, and afterwards acquire a sweet taste. It is said that white mulberries were originally produced from a common mulberry being grafted on a white poplar. These mulberries have a kind of honey, insipid, and disagreeable taste; consequently they are not used in foods.

MUM.—A wholesome kind of malt liquor, brewed chiefly from malt made from wheat instead of barley. It is not thought fit for use till it has been full two years in the cask. It is much drank in Germany; and Brunswick, in Lower Saxony, is the place of the most note for making it; hence it is frequently called Brunswick mum. It is sometimes imported into this country, and our own brewers also make small quantities of this bulk-increasing liquor.

Good mum cannot be brewed, even without duty, at less than five shillings a gallon, being equivalent to one shilling the quart bottle. It requires to be made in quantities of ten gallons at least, and is seldom fit for bottling in less than a twelvemonth.

MUSHROOM (*Agaricus campestris*, L.)—The mushroom is a well-known native vegetable, springing up in open pastures, in August and September. It is most readily distinguished, when of middle size, by its fine pink or flesh-coloured gills and pleasant smell; in a more advanced stage, the gills become of a chocolate colour, and it is then more apt to be confounded with other kinds of dubious quality; but that species which most nearly resembles it, is slimy to the touch, and destitute of the fine odour, having rather a disagreeable smell; farther, the noxious kinds grow in woods, or on the margins of woods, while the true mushroom springs up chiefly in open pastures, and should be gathered only in such places. Mushrooms have been long used in sauces, in ketchup, soy, and other forms of cookery. They are of a tough, leathery consistence; and being almost indigestible, they afford little nutriment, notwithstanding they in a great measure resemble animal food. Pickled with vinegar or salted, mushrooms become still more tough; and roasted with butter, they are an indigestible mass, and extremely liable to turn rancid in the stomach.—See *Ketchup*, *Soy*, *&c.*

Pliny exclaims against the luxury of his countrymen in the use of mushrooms; and wonders what extraordinary pleasure there can be in eating such dangerous food. The ancient writers in the Materia Medica, seem to agree that mushrooms in general, are unwholesome; and the moderns, Lemery, Allen, Geoffrey, Boerhaave, Linnæus, and others, concur in the same opinion. There are numerous instances on record of their fatal effects, and almost all authors agree that they are fraught with poison.

The common esculent kinds of fungi, if eaten too freely, cause heartburn, sickness, vomitings, diarrhœa, dysenteries, and other dangerous symptoms. It would be well, therefore, they were either banished from the table, or used more sparingly; but if the palate must be indulged in these treacherous gratifications, or as Seneca terms them, "this voluptuous poison," it is necessary that those employed in collecting them, should be extremely cautious, lest they collect such as are absolutely pernicious. The edible mushrooms at first appear of a roundish form, like a button; the upper part and the stalk are very thin; the under part is of a livid flesh-colour; but the fleshy part when broken, is very white. When they are suffered to remain undisturbed, they will grow to a larger size, and expand themselves almost to a flatness, and the red part underneath will change to a dark colour.

Poisonous mushrooms may be distinguished from the edible ones by their botanical characters, and by the following characteristics. They grow in wet shady places, have a nauseous odour, and are softer, more open and porous; have a dirty-looking surface, sometimes a gaudy colour and many very distinct hues, particularly if they have been covered with an envelope; they have soft bulbous stalks, grow rapidly, and corrupt very quickly.

The following Catalogue of Edible and Poisonous Mushrooms is taken from Sowerby's splendid work on English fungi.

EDIBLE SORTS.

Agaricus Campestris (1), common field, a cultivated mushroom.

A. Chantarellus (2), chanterelle.

A. Violaceous (3), violet or blue.

A. Cinnammeus (4), cinnamon.

A. Deliciosus (5), sweet mushroom.

A. Pratensis (6), champignon.

A. Lactifluus, milky.

A. Procerus (7), the grisette of the French, or tall.

A. Aurantiacus, orange.

A. Solitarius, solitary.

A. Virginius, mauseron mushroom.

A. Orcades, fairy ring, or Scotch bonnets.

DANGEROUS SORTS.

Agaricus campestris, *var.*, dangerous variety of cultivated mushroom.

A. Clypeatus, long stalked.

A. Muscarius, reddish.

A. Piperatus (8), pepper.

A. Campanulatus, bell.

A. Mamimosus, nipple.

A. Aurantiacus, *var.*, dangerous variety of orange mushroom.

A. Necator

A. Vinosus, poisonous or toadstool.

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(1) There are several species of agaric that go by this term; as the *agaricus edulus, chanterellus, deliciosus, violaceous*, &c.; but the eatable mushroom of this country, is the agaricus campestris of Linnæus. Similar to it in quality is the champignon. Broiled, with salt and pepper, or stewed with cream and some aromatic, they are extremely delicious; and if not eaten to excess, salubrious. Great care should be taken to ascertain that they are the true fungi.

(2) The *agaricus chanterellus* is esteemed a delicacy by the French. Broiled, with salt and pepper, it has much the flavour of a roasted cockle.

(3) The violet mushroom requires much boiling, but when sufficiently done and seasoned, it is as delicious as an oyster. Hudson's bulbosus is only a variety of this.

(4) Brown mushroom. This species of agaric is of a pleasant smell. When broiled it gives a good flavour.

(5) This fungus, well seasoned and then broiled, has the exact flavour of a roasted muscle. It is in season in September. Care must be taken not to confound it with the *agaricus necator*, or therologus galus, which have yellow milk and are deleterious.

(6) The champignon of Hudson's Flora Anglica. This plant has but little smell, and is rather dry; yet when broiled and stewed, communicates a good flavour.

(7) This is the best, and the most usually eaten of those the gills of which do not melt into a black liquor.

(8) The plant thus named by Linnæus is the pepper mushroom; also called pepper agaric. When freely taken, fatal consequences are related by several writers to have been the result. When this vegetable has even lost its acrid juice by drying, its caustic quality still remains.

The medicinal treatment of persons affected from eating poisonous fungi, consists, in the first place, in giving an emetic of tartarized antimony; followed by frequent small doses of Epsom salts, and stimulating clysters. After the poisonous substance is removed, ether, with small quantities of brandy and water, may be administered; but if inflammatory symptoms manifest themselves, such stimuli should be omitted, and other appropriate means resorted to, as circumstances may indicate. — See *Culinary Poisons.*

None of the following species are known to be dangerous; they are sold for food in the markets of Tuscany, and other foreign places: viz. The musk champignon *(Agaricus araneosus; cortinellus: albellus);* the mugnaco *(eburneus);* the jozzolo; *virginens;* the petite oreillette; *auricula,* the escoubarbe; *eryngii,* the ciccioli, which grows on the sea-holly; *ilicinus; tortilis,* the mousseron de Dieppe; *trestis,* the fungus appossionato; *nivalis,* the fungo dormiente; *socialis,* pivonlade d'Ecosse; *palomet,* the palombette; *virens,* the verdone; *translucens,* the pivoulade de saule; *deliciosus; subdulcis; piperatus; procerus; cylindraceus; attenuatus; asper; solitarius incarnatus; vaginatus,* and *aroideus.*

The bug agaric *(Agaricus muscarius*)* so called from its known virtues in destroying bugs, is not much known in this country. Haller relates that six persons were poisoned with it at one time in Lithuania, and that in others it caused delirium. The following account, from Orfila, of the effects of this species in the animal economy, is interesting. Several French soldiers ate, at two leagues from Polosck in Russia, mushrooms of the above kind. Four of them of a robust constitution, who imagined themselves proof against the consequences under which their feeble companions were beginning to suffer, obstinately refused to take an emetic. In the evening the following symptoms appeared:—anxiety, sense of suffocation, ardent thirst, intense griping pains, a small and irregular pulse, unusual cold sweats, changed expression of countenance, violet tint of the nose and lips, general trembling, fœtid stools. These symptoms becoming worse they were carried to the hospital. Coldness and livid colour of the limbs, a dreadful delirium, and acute pains, accompanied them to the last moment. One of them sunk a few hours after his admission into the hospital; the three others met the same fate in the course of the night. On opening their bodies after death, the stomach and intestines displayed large spots of inflammation and gangrene; and putrefaction seemed advancing very rapidly.

The bug agaric is employed externally to strumous†, phagedenic‡, and fistulous ulcers, as an escharotic; that is, a substance which possesses the power of destroying the texture of the various solid parts of the animal body to which it is directly applied.

The consumption of mushrooms invariably does more harm than good, and whenever they are used it ought to be in moderation; and a little brandy or wine should always succeed their use. Many lives have been lost by eating mushrooms, which gave Pliny occasion to exclaim against the luxury of mankind, who, to gratify their appetites, very often run the risk of their lives, by eating such equivocal substances. Nero, the Roman tyrant, called mushrooms the food of the gods, because the emperor Claudius, whom

* *The agaricus-stipitatus, lamellis demidiatis solitarius, stipite volvato, apice delatato, basi ovato,* of Linnæus.

† Ulcers, partaking of the nature of scrophula or ring-worm.

‡ An ulceration which spreads very rapidly.

he succeeded, was poisoned by eating them, and was afterwards deified. The best and safest mushrooms are those which spring up in one night upon a dung bed; where gardeners have found the art to make them grow all the year round. As a test of their being wholesome, they ought to be white above, reddish underneath, pretty large, plump, tender, easily broken, and of an agreeable taste and smell. The mushrooms that grow in meadows are also very good, as appears by the following lines:—

> ——— Pratensis optima fungis
> Natura est; aliis male creditur.

It is also to be noted, that if mushrooms do not retain their natural colour after they are washed, but turn either blue, red, or black, they are dangerous, and ought consequently to be rejected.

MUSK.—A concrete animal substance found in a quadruped (the *Moschus Moschifera* of Linnæus) of the goat kind, inhabiting Thibet and other parts of Asia. It is found in the male only, in a bag situated between the navel and the anus, of the size of a pigeon's egg when cut out. Its odour is peculiar to most people, if not too strong. The best comes from China. It is of considerable use among perfumers and confectioners, and is also employed medicinally in spasmodic disorders, as hiccup, fevers, &c., and particularly in convulsive complaints. The effects it produces are ease from pain, quiet sleep, and copious perspiration. It does not, like opium, leave behind it any stupor or languidness.

MUSSELS.—A common species of shell-fish. They are of a more solid texture than oysters, and consequently not so easily digested. The sea mussels afford a hard, indigestible, and, as some imagine, a poisonous food. Although the examples of their deleterious nature are very rare, yet they ought not to be eaten without vinegar, or some other vegetable acid, acting as a corrector of their bad qualities, or, in the opinion of others, as an antidote. They should also be deprived of the little green weed that adheres to them, which is decidedly injurious.—See *Fish, Poisonous.*

MUSTARD.—An ingredient so necessary in all cold salads, and those of the crude kind, that it ought never to be omitted. The flour of mustard is used as a condiment; and the seeds are said to be highly beneficial in indigestion, and rheumatic affections. The administration of the white mustard seed has been recently revived, with all the confidence that usually attaches to a new medicine. It is certainly beneficial in morbid cases of the intestinal canal; "but," says Dr. Paris, "according to my experience, it is serviceable only in such cases as are marked by alimentary torpor. In affections attended with muscular irritability, or in those associated with a diseased state of the mucous surfaces, it is unquestionably useful. I have known it to ensure a regular alvine discharge in persons of costive habits; and I have also found it to correct that species of diarrhœa which attends a diseased condition of the mucous membrane of the intestines." The unbruised seeds of the white mustard were much recommended by Dr. Mead in abdominal dropsy; and by Bergius in agues; and their virtues have been highly extolled by numerous writers, in stimulating the stomach and intestines. It is, however, observed by Cullen, that the seeds given in this form are never broken down or dissolved in the stomach, but pass away entire by stool; consequently, he inferred that they were incapable of producing any beneficial effect. This statement appears to have brought them into such a state of disrepute, that they fell into disuse, and it is only of late that they appear to have gained anything like professional confidence. Their administration requires caution; if any inflammatory irritation exists, they must prove injurious: where, however, there is a sluggish or deficient secretion of the alimentary juices, their utility is unquestionable. In administering them, however, as a remedy, caution must be observed, lest they accumulate in the bowels; as it is not improbable that, from the offensive nature of the evacutions of some who have taken them, that they disengage a portion of sulphuretted hydrogen in their passage.

MUTTON. — This is the common name of the flesh of a sheep after the animal has been killed, and has been frequently preferred to the flesh of all other quadrupeds, even by persons of the highest rank, who had access to the choicest viands. Besides its intrinsic excellence as a species of food, mutton has the advantage of being more generally suited to different climates: whereas, beef requires a very nice intermediate state, which it seems chiefly to enjoy in England; for, although Scotland supplies what are esteemed excellent cattle, it is in the rich English pastures that they are brought to perfection. Now the sheep can be brought almost to the same perfection in Scotland as in the southern countries. Bacon, in his Natural History, observes, that the flesh of mutton is better tasted where the sheep are fed upon thyme and wholesome herbs. Hence, the mutton fed on the delightful downs of Banstead, in Surrey, which are covered with thyme, is generally allowed to be some of the sweetest and best flavoured in the kingdom.

The mutton of sheep fed on dry pastures, is a better and more nourishing food than that of others reared in moist places. Those also fed near the sea-shore are excellent meat; the saline particles which they imbibe, giving at once consistence and purity to their flesh. The meat of rams is tough and unpleasant; but that of ewes, and still more that of wethers, is of a rich and viscous nature. Young mutton is juicy and easily digested, but is rather tough, and has not that balsamic alimentary juice peculiar to sheep above a certain age. Tup-mutton, from its strong and disagreeable smell, besides being extremely tough and difficult of digestion, is never eaten but by those who cannot afford to purchase mutton of a better quality; and ewe-mutton, if it be more than between two and three years old, is likewise tough and coarse. Wedder-mutton, or the flesh of the castrated animal, is most esteemed, and is by far the sweetest and most digestable.—See *Lamb*, *Sheep*.

A roasting piece of mutton ought to be exposed to the open air for several days, according to the weather and season; it then affords a palatable dish, which is easily digested, and agrees with every constitution. But the fat of mutton is almost indigestible; for it easily coagulates in the stomach, and oppresses that organ; hence, the lean part of mutton is more nourishing, as well as more conducive to health. The feet of sheep are nourishing, on account of their jelly, and are of great service for injections, in those diseases which originate from acrimony in the intestines.

MUTTON, to Choose.—See *Butcher's Meat, &c.*

N.

NECTAR.—A wine made from honey.

NECTARINE.—See *Peach Tree.*

NECTARIUM. (Lat.)—(Derived from Nectar, because it contains a sweet, honey-like fluid). In botany it means the nectary or honey-cup. An accidental part of a flower which does not come under the description of any of its organs. It may be defined, that part of the corolla which contains, or which secretes honey, though it is not necessary to a nectary that honey be present. Scarce a flower is to be found that has not more or less honey, though it is far from universally, or even generally, formed by an apparatus separate from the petals. In monopetalous * flowers, or the lamium album, the dead nettle, the tube of the corolla contains, and probably secretes, the honey without any evident nectary. The most indubitable, however, of all nectaries, as actually secreting honey, are those of a glandular kind. In the natural order of cruciform plants, composing the class *tetradynamia,* † there are generally four green glands at the base of the stamens, as in *dentaria,* ‡ and sesisymbrium, whilst in *Pelargonium* the nectary is a tube running down one side of the flower stalk. The elegant *parnassia* has a most elaborate apparatus or nectary. (*Smith*). Vauxhall nectar (mock arack), i. e. made with rum, two pints; flowers of benjamin, twenty grains.

NITROGEN.—A simple substance, called azote by the French chemists. It enters into a variety of compounds, and forms more than three parts in four of the atmospheric air. The existence of nitrogen gas, as distinct from any other gaseous substance, was first noticed by Dr. Rutherford, in 1772. Lavoisier, who called it azote, because it is unable to support the respiration of animals, discovered that it is a constituent part of the atmosphere in 1775; and the same discovery was made soon after, or about the same time, by Scheele.

Pure nitrogen is a colourless gas, wholly devoid of smell and taste. It does not change the colour of vegetables, and is distinguished by other gases more by negative characters than by any striking quality. It does not support combustion; but, on the contrary, extinguishes all burning bodies that are immersed in it. No animal can live in it; still it exerts no injurious action either on the lungs, or on the system at large; the privation of oxygen being the sole cause of death. It is not inflammable, though, under favourable circumstances, it may be made to unite with oxygen. Water, when deprived of air by ebullition, takes up about one and a half per cent. of it. Its specific gravity is 0.9722, on the assumption that air consists of one measure of oxygen to four of nitrogen, and that 1.1111 is the specific gravity of oxygen gas, and, therefore, 100 cubic inches of it, at the mean temperature and pressure, will weigh 29,652 grains.

Nitrogen gas is easily prepared by burning a piece of phosphorus in a jar full of air inverted over water. The strong affinity of phosphorus for

* A flower, having only one petal (the name of the coloured leaflets of a flower), as that of the convolvolus primula, &c.

† A word of Greek derivation, signifying six stamens, four longer than the other two.

‡ Plumbago Europæa, the systematic name of the tooth-wort. Dentaria. Dentillaria.

oxygen, enables it to burn till the whole of that gas is consumed. The product of the combustion, phosphoric acid, is at first diffused through the residue in the form of a white cloud; but as this substance is rapidly absorbed by water, it disappears entirely in the course of half an hour. The residual gas is nitrogen, containing a small quantity of carbonic acid and vapour of phosphorus, both of which may be removed by agitating it briskly with a solution of pure potash. This gas may also be procured by exposing a mixture of fresh muscle and nitric acid of specific gravity 1.20 to a moderate temperature.* A large quantity of gaseous matter is evolved with effervescence, which is nitrogen mixed with carbonic acid; the latter must be removed by agitation with lime water but the residue still retains a peculiar odour, indicative of the presence of some volatile principles, which cannot be wholly separated from it. The theory of this process is rather complex, consequently may be more conveniently studied in more elaborate works; as well as the other modes employed in obtaining it. See--*Oxygen.*

NON-NATURALS.—Under this term, ancient physicians, from whom it is derived, comprehend *Air*, *Meat*, drink, sleep, and watching, motion and rest, the retentions and excretions, and the affections of the mind (all of which see); or in other words those principal matters which do not enter into the composition of the body, but which at the same time are necessary to its existence,—called by Galen, Conservatrices Naturæ. See *Dietetics.*

NOUILLES.—An Italian paste resembling macaroni; it is flat instead of being in pipes.

NUTMEG, *(Nux Myristica).*—The aromatic kernel of a large nut, produced by a tree said to resemble the pear tree, growing in the East Indies, particularly in the Molucca Islands, and Botany Bay. Those of the latter place are by no means so good as the former, being spongy and cellular. There are two sorts of it, male and female; the former of a large and oblong shape, the latter soft and round: the small round ones have most aroma and fragrancy; the others are spongy. The nutmeg is enclosed in a hard shell. *Mace* is a reticular substance round this shell, and there is a third coat, like that of a walnut. It is moderately warm, grateful to the taste, and unctuous to the feel. It is an excellent carminative and cordial; when toasted, so as to lose some of its essential oil, it is useful for children who have weak bowels, becoming gently astringent and cordial. In diarrhœas and languor of the bowels, it is very useful, combined with a few grains of rhubarb or prepared chalk. The spirit of nutmeg is an useful aromatic.

Take,	Rhubarb . . .	½ drachm
	Magnesia . . .	1 drachm
	Peppermint water	2½ ounces
	Spirit of nutmeg .	3 drachms.

Mix. Two tea-spoonfuls may be given occasionally to a child from six to twelve months old, and the dose proportionally increased to the age of the subject, either to purge or strengthen the stomach, &c.

If nutmegs be digested with spirits, the colour, aroma, and stimulating properties are taken up, and a white unctuous substance left behind. This the druggists formerly used to impregnate with a few drops of some essential oil, and sell it as the oil itself. Nutmegs yield, by distillation, a very fine essential oil, which is very grateful, and possesses the flavour of the spice in perfection; two drops being nearly equal to a pound of the powder.—See *Mace.*

NUTRITION.—The function of nutrition may be considered as the completion of assimilation. The

* See Elements of Chemical Philosophy, by Sir Humphry Davy.

food, changed by a series of decompositions, animalized, and rendered similar to the being which it is designed to nourish, applies itself to those organs the loss of which it is to supply; and this identification of nutritive matter to our organs constitutes nutrition. The constituent parts of the living body are continually on the decay, and a variety of causes are as continually carrying them off; several of its organs are constantly engaged in separating humours, which pass off loaded with a part of its substance, consumed by the united action of air and caloric; while internal friction, by a pulsatory motion, detaches its particles. In this manner the animal machine is continually being destroyed; and, perhaps, at distant periods of life, it does not contain a single particle of the same constituent parts.

The faculty of feeding, that is, of repairing the successive waste of the body, supposes a delicate sentiment, capable of choosing the aliments necessary and fit to be converted into or assimilated with our substance, of rejecting such as are not analogous to its actual condition, or are not proportioned to the actual power of our organs of arranging the instruments which ought to divest these aliments of their nature, and of distributing exactly and proportionately throughout every part of the living body, the produce of their digestion. Every circumstance which accompanies the exercise of this function proves two essential points: the first, that the immediate organ in which it is exercised is not the only instrument; the other, that it is not the effect of the particular sensibility and action of that organ, but of the general active principle, in which are united all the sensations, and from which every motion emanates. This principle, in fact, serves as a distinguishing mark among all the important sensations which it is possible for the animal to experience, and which solicits it to recruit its exhausted strength, and to fortify, by fresh supplies, its dependencies, weakened by the succession of vital motions. This sensation is subordinate to it; it is modified by it; and it is this alone which causes it to exist; for hunger is seldom proportioned to the real want of the living body; imaginary want, or habit, being the most frequent cause of this mute inquietude, which often induces us to take food. We succeed in silencing this sensation, by giving it in exchange interesting occupations to which the mind yields. Strong passions, diseases, and other affections, may, for a length of time, suspend the impressions of hunger. One might easily believe, by seeing the solution of solids, and the putrid fluids of animals which have died from hunger, that these phenomena are the natural effects of the swooning of a body, which, like a flame, is extinguished for want of aliment, were it not known that maniacs can live for several months without eating. Might not the sudden changes sometimes occasioned by hunger be rather the result of a wandering sensibility, which, in its despair, reacting upon all the organs submitted to its influence, interdicts the order of their movement, destroys their texture, and abandons the fluids which they contain to all the energy of the physical causes which tend to change them?—See *Hunger*.

An experiment made with madder, which, when mixed with the food of animals, reddens their bones, proves in a decisive manner this perpetual decomposition of living animal matter, since, to remove or obliterate entirely the diffused red colour thus given to bones, it is only necessary for a time to suspend the use of the root. Therefore, if the compact and solid parts be in a continual motion of decomposition and recomposition, there can be no doubt that this motion must be more rapid in those parts the constituent principles of which are in the smallest degree of cohesion, as in the fluids.

It has been a subject of consideration, to determine the period of the entire renovation of the body; for which, however, it has been said that an interval of seven years is necessary, for the same particles to be totally obliterated, and their place supplied by others; and this change, it would appear, is more rapid in infancy and youth; it would also seem to be retarded in manhood, and to require a very long time to be accomplished in old age, when all our parts assume a remarkable degree of fixity and consistence, at the same time that the vital actions become more languid. There is little doubt that sex, constitution, climate, profession, mode of living, and a variety of other causes, tend to accelerate or retard this period; so that it is impossible to affirm anything certain relative to the precise time of its duration.

NUTS.—The use of nuts, especially dry ones, incommodes the throat, the tongue, and the palate: they are very difficult of digestion.—(See *Filberts*). Nuts taste well enough when they are fresh; but as they grow old, so they become oily, prejudicial to the taste as well as health. Preserved nuts are very agreeable and wholesome; they fortify the stomach, provoke appetite, correct fetid breath, stimulate the seminal vessels, and do not produce the effects attributed to the nut in a dried state, the sugar having corrected the saline property of the former. They agree best with people advanced in years, and those of a phlegmatic and melancholic constitution.—See *Walnuts*.

NUX VOMICA, *(Vomic Nuts)*.—The seeds of a large tree, named Strychnos, growing in the East Indies; the fruit of the tree is a globular berry, of an orange colour. Nux vomica is a seed or kernel, of a flat, roundish form, about an inch broad, and a quarter of an inch thick, with a little prominence in the middle, on both seeds of a grey colour, covered with a kind of woolly matter, and is internally tough, and exceedingly hard, like horn. It contains half its weight of a bitter, gummy matter, and some portion of resin. It has a bitter taste, and is void of smell. St. Ignatius's bean has been supposed to be the same thing; but it is quite distinct. It was long considered as a poison, and it does kill many animals. Gesner gave ten grains to a dog; the result was, the animal died comatose and convulsed. Gesner recommends it in the plague, and it has been preferred to bark in intermittents. A tailor used it as a nostrum in agues with great success. It is not much used at present in this country. It is a tonic, combined with certain narcotic powers, determining to the head. It increases the strength and appetite, beginning with four or five grains twice a day. It is never proper where there is a tendency to apoplexy, as wherever there is giddiness or stupor no tonic is proper.

MM. Pelletier and Caventon discovered strychnine, one of the new vegetable alkalies, in 1818, in the fruit of the *Strychnos Ignatia*, and *Strychnos Nux Vomica*. It is one of the most virulent poisons hitherto discovered, and is the poisonous principle of the substance which contains it. It has since been extracted by the same chemists from the upas. Its energy is so violent, that half a grain blown into the throat of a rabbit occasioned death in the course of five minutes. Its operation is always accompanied with symptoms of locked jaw, and other tetanic affections.

It is suspected that what at one time was generally sold to brewers for *cocculus Indicus* was really *nux vomica;* and that the numerous body of quacks who dubbed themselves brewers' druggists, and who were almost annihilated some twelve or fourteen years ago, passed the *faba amara* (bitter bean) and *nux vomica* under the name of *cocculus Indicus*, when pleading to the minor offence.

O.

OATS.—When deprived of the husk, and reduced to groats or grits, oats are used as the common dish for the infirm and sick. They impart to water a thick mucilage, which, with the addition of a few currants boiled in it, is of a nourishing and slightly aperient quality. Not much more than half a century ago, it was computed that nearly a fourth part of the inhabitants of Great Britain lived upon oat bread; and it is supposed under an improved system of agriculture, more nourishment per acre may be obtained from oats, than from the same quantity of barley or rye; but to wheat it is evidently inferior (see *Groats*). Porridge made of oatmeal, the common food of children, and the working classes of adults in Scotland, is not so heavy as that of wheat flour, or hasty pudding; though both of them require vigorous digestive organs, robust constitutions, and strong exercise, in order to produce a proper nutriment.—See *Bread*, *Porridge*, &c.

OCTOBER BEER.—Old or strong beer is designated by the term *October*, because that month is held to be peculiarly propitious to the brewing of this grateful beverage.

> Nor wanting is the brown October, drawn,
> Mature and perfect, from this dark retreat
> Of *thirty-years;* and now his honest front,
> Flames in the light refulgent, not afraid
> Even with the vineyard's best produce to vie.
>
> THOMSON.

Practical brewers are well aware that the peculiar flavour, and other qualities of malt liquor, depend very much on the water used, the temperature of the air, and the particular exposure of the malt-house as well as the brew-house. London porter, therefore, can only be brewed in London, for were the same ingredients used in any other place, where the same water and other causes conspire to produce the well known qualities of this drink, the same results would not be produced. Hence the impracticability of following the directions laid down in books for making Edinburgh, Burton, and Windsor ales; for without the same water, and the same exposure as the famous breweries in those particular places, it would be impossible to produce similar drinks. It is these several circumstances which influence the qualities of beer brewed in October, which for ages has acquired so high a reputation. The state of the air, except so far as regards its temperature, cannot be so particularly appreciated; though some of the changes which take place in water, are known. The decay of vegetables, in immense quantities, must tend to impregnate both rivers and springs with putrid matter, which, if not in great excess, may be rendered inoffensive, by combining with the earthy salts of the water; and, at the same time, these salts will in some degree be neutralized, and the water rendered softer than before; it need not, therefore, be told that the softer the water the better adapted it is for brewing. A late author is, consequently, decidedly wrong, when he says it is to an erroneous prejudice that October beer owes its fame, and that that which is brewed in February and March must be better.—See *Malt Liquors*.

ODOURS.—Scents, whether good or bad, but most properly applied to a sweet one. Fragrance ; perfume.

There are many things which emit a very rank and disagreeable smell, which, notwithstanding, are noways hurtful to the body, but remedy certain ailments, and discuss and dissipate any turbid or infected air. Of this sort are castoreum, galbanum, sagapenum, assafœtida, the herb anagyris, or beautrefoil, sulphur, gunpowder, and the stench arising from burnt feathers, leather, and horn. Women are relieved by such smells, and more particularly virgins, in all suffocations, strangulations, and hysteric affections; and wherever offensive exhalations proceed from carcasses, marshy grounds and stagnant waters, which beget putrid fevers, dysenteries, pestilential and contagious diseases, any of the fœtid matters just enumerated are reputed to meliorate or purge away the noxious effluvia. Those who travel into Germany, and many other countries on the Continent, may observe how diligent the inhabitants are, under the apprehension of a plague, or any epidemical disorder, to preserve their habitations from infection. The common people are seldom remarkable for delicacy, but must decline it on such occasions, usually burn scraps of leather, horn and bones; and the fumigation is found always powerful enough to expel any malignant quality of the air. Hence the proverb among them, "horns are burnt there," to denote that places, infected with the plague or contagious diseases, are to be avoided. A similar remedy we find to have been often adopted in populous towns and cities in any grievous epidemy, by the firing off, towards the evening, of great guns. This notion seems to have been borrowed from Hippocrates advising the kindling of great fires in streets, for dissipating clouds and clearing away infection. But if certain fetid smells recommend themselves by their utility, being endued with qualities truly salubrious, the same cannot be said of those odours that are sweet and agreeable. Nothing is so pernicious to females, and those of delicate constitutions, as the combined smell of flowers, especially in any close place from whence the external air is for any time excluded. Fainting fits, and sometimes death, are the consequences of abiding or sleeping amidst the effluvia which emanate from flowers. How many instances have there been of persons becoming delirious, and struck with madness, by breathing the agreeable odour of beans in bloom! There are, indeed, some smells that dissipate fumes, and disperse whatever may be unfriendly to the brain, by recruiting animal life, and raising the languid spirits—some of this class are vinegar, rose-water in which cloves have been macerated, and new bread dipt in odoriferous wine; but there are others which excite pain, and superinduce a torpor, heaviness, and sort of stupefaction, as garlic, onions, leeks, elder, wormwood, rue, southernwood, and many aromatics which exhale a smoky and heavy odour, affecting the head and twitching the nostrils. In short, whatever is intensely odorous is hurtful to the head, by suddenly attracting heat and moisture to the upper parts; and on some habits of body it acts as smoke confined in a room, intercepting and stopping respiration, unless doors or windows are opened to the admission of the air.

Physicians, in visiting the sick, and before ever they have seen them, form frequently certain prognostics on the event of the sickness, from the cadaverous smell that affects them; but in this respect dogs are more sagacious than men, being attracted by the smell of death, and often seeming, before the patient has expired, to demand their prey, or rather to prognosticate the event, by a continued howling. "Whilst I lived at Roper's" (*vide* Arts of Copenhagen), says a writer, "which was seven years, I took notice of a little dog of a chestnut colour, that very often boded the death of sick persons, without being once, for aught I conld learn, mistaken. Every time he barked at night under the windows of any one whose sickness did not even appear dangerous, it happened infallibly that the sick person died that week. I knew, also, a young man that had been bitten by a mad dog, who could distinguish his friends at a considerable distance by the smell, before he could even distinguish them by the sight. A lady of my acquaintance (continues the same author) had a favourite monkey, and the monkey in return to the kindness of his mistress was so fond of her, that he would scarce ever leave her. But his admirable and nice smell, in distinguishing contagious distempers, was, no doubt, the cause of shewing a different inclination. The measles became epidemical in the country, the lady fell sick of them, and some days before, when there was no indication of sickness, the monkey abandoned his mistress, and would not appear in her chamber, as if by the acuteness of his smell he had been sensible she would soon sicken: as soon, however, as she recovered, he returned to her with all his accustomed familiarity. Some time after the lady had a slight fever, but without any appearance of malignity. The monkey remained with her as a constant companion, and seemed to have a thorough knowledge of the difference of distempers. His presence, also, in the last conjuncture, might have been of advantage to his mistress, if it be true, as it is said, that the flesh of the monkey is a good febrifuge to the lion." This relation is concluded with another account of the surprising influence of odours upon animals—"Being at Rome, and having engaged with other gentlemen to take a journey to Naples, we all set out together, to the number of thirty-two, on horseback, that, by being thus united in a body, we might be in a better state of defence against a number of assassins and banditti who infested the high roads. On the third day of our journey one of the horses of the troop was so fatigued, that he could scarce keep pace with the rest, and sometimes could not be got forward. His rider was at a loss to account for this, when all of a sudden his horse took heart; but some time afterward falling into his former lassitude, the rider was again brought into the same dilemma. Surprised at this alternative of strength and weakness, and endeavouring to know the cause of it, he observed, at last, that his horse went on very well when he followed a mare on which one of the gentlemen rode, but that he immediately became spent and tired at a distance from her. After this observation he begged the gentleman not to leave him; and his horse, in this manner, animated by the smell that exhaled from the other, carried him with as much spirit as he could wish, to the end of the journey with the rest of the company."

Under odours may be ranked what are termed *aerial poisons*, by which, though death frequently occurs, many accidents happen. The cause here is the inhalation of the pernicious fumes of certain metals; the vapours arising from charcoal, coke, or from liquor in a state of fermentation; as well as from sleeping in close unventilated apartments, or respiring the foul air of wells, privies, caverns, and the like. As a necessary precaution, and to guard effectually against the accidents that may happen from the above-mentioned causes, pits, wells, cellars, deep vaults, or other places, that have long been pent up from air and light, ought never to be entered immediately after opening them; a lighted candle or torch should first be let down, for where these will not burn animal life cannot long be sustained. —See *Smell.*

OFFAL.—The *lungs* of animals contain nothing but air and blood-vessels, which are very tough, solid, difficult to be digested, and afford little nourishment. Besides, on account of the encysted breath, and the mucus contained in them, they are in reality disgusting. The *liver*, from its dry and earthy consistence, produces a vitiated chyle, and obstructs the vessels—hence, it requires a great quantity of drink, and ought never to be used by the plethoric: the blood-vessels and biliary parts adhering to it, are particularly disagreeable. The *heart* is dry, scarcely digestible, and not very nourishing. The kidneys are also acrid, hard, tough, and not easily digested by the delicate. These intestines, however, of young animals, such as calves and lambs, produce aliment sufficiently wholesome. The blood of animals is completely insoluble, and consequently in no degree nourishing.—See *Oils, Animal.*

OIL.—Oil is preferable to animal fat, but ought to be fresh, mild, and of a sweetish taste; it seldom or never agrees with weak stomachs; for in them, even in its mildest state, it easily generates a rancid acrimony, extremely injurious to digestion. It should be eaten with much bread, when used in salads or otherwise, as it requires a powerful and active bile to assimilate it to alimentary matter. Olives and almonds yield the greatest quantity of oil; and next to Provence oil, that expressed from walnuts and chestnuts is the sweetest and easiest of digestion. All oily substances require stronger powers of digestion to reduce them to chyle, and even when thus reduced M. Magendie found that it was in a less digested state than what was formed from other substances. Besides the oil used for salads (olive oil), and in some parts of Europe for dressing vegetables, it is contained in a large proportion in olives, and all sorts of nuts, which of course renders them difficult of digestion.

OIL, CASTOR, PLANT.—*(Ricinus Communis,* L.*)*.—The castor oil plant was first cultivated in England, in the time of Turner, who stands among our earliest botanists, or rather herbalists, and is now annually reared in many gardens in the vicinity of London. An oil extracted from the seeds of this plant, and known by the name of *oleum ricini, palma christi*, or castor oil, is the drug to which the Pharmacopœias refer, and which has lately come into frequent use, as a quick but gentle purgative. The oil usually employed in this country is imported from the West Indies, where it is found to be one of the most certain remedies in the dry belly-ach, a species of Devonshire colic. Dr. Cullen observes, that this oil, when the stomach can be reconciled to it, is one of the most agreeable purgatives that can be employed; having the particular advantage of operating sooner after its exhibition than any other of the same class of medicines. It is particularly suited to cases of costiveness, and even to cases of spasmodic colic, and more to those troubled with hemorrhoids. The common dose is a tablespoonful or half an ounce, though many require double this quantity.

OIL OF CINNAMON.—A warm stimulant, and delicious stomachic, given in the dose from one to three drops, rubbed down with some yolk of egg, in a little wine; it allays violent emotions of the stomach from morbid irritability, and is particularly serviceable in debility of the first passages, after any depressing disorder.

OILS, ANIMAL.—The fat and marrow of animals afford, indeed, solid and elastic alimentary juice, increase the blood and fluids, but are difficult to be digested; they require a powerful stomach, perfect mastication, sufficient saliva and bile, and agree best with persons who take much bodily exercise. If not duly digested they occasion diarrhœa, weaken the stomach and bowels, stimulate too much by their uncommon acrimony, and easily turn rancid, especially when eaten with meat much disposed to putrefaction. They are apt to destroy the elastic power of the first passages, as well as of the whole body, to produce the heart-burn, cramp of the stomach, and head-ach, particularly in irritable habits, and, at length, to generate an impure and acrimonious blood. Among the oils and fats produced from animal substances are enumerated—

1. Adipocire.
2. Ambergris.
3. Butyrine.
4. Chlorestine.
5. Dippel, animal oil of.
6. Hircine.
7. Hog's lard and suet.
8. Phoconine.
9. Spermaceti.
10. Spermaceti oil.
11. Train oil,—which see.

OILS, ESSENTIAL.—Essential oils have a penetrating odour and acid taste, which are often pleasant when sufficiently diluted. They unite with fixed oils in every proportion, and are sometimes adulterated with them. The most interesting of this class are—

Oil of Anise.	Oil of Citron.
—— Carraway.	—— Nutmeg.
—— Cloves.	—— Lavender.
—— Chamomile.	—— Peppermint.
—— Cinnamon.	—— Turpentine.

Of these the most important is the last, which is much employed in the preparation of varnishes, and for some medical and chemical purposes. The others are used medicinally, as carminatives, or as perfumes.

OILS, FIXED.—The fixed oils are usually contained in the seeds of the almond, linseed, rape-seed, and poppy-seed; but olive oil is extracted from the pulp which surrounds the stone. (See *Olive Oil*). They are procured by bruising the seed, and subjecting the pulpy matter to pressure in a hempen bag, a gentle heat being generally employed at the same time to render the oil more limpid. With the exception of the palm oil, the fixed oils are fluid at common temperatures, are nearly inodorous, and have little taste. They are lighter than water, are commonly of a yellow colour, but may be rendered nearly or quite colourless by the action of animal charcoal. They undergo considerable change by exposure to the air. They do not unite with water, though they may be permanently suspended in that fluid by means of sugar or mucilage, so as to form an emulsion. For the most part they are sparingly soluble in alcohol and ether. Strong sulphuric acid thickens the fixed oils, and forms with them a tenacious matter like soap: and they are also rendered thick and viscid by the action of chlorine. Concentrated nitric acid acts upon them with great energy, giving rise, in some instances, to the production of flame. Fixed oils unite with the common metallic oxides, and are readily attacked by alkalies.—See *Olive Oil, Palm Oil, &c.*

OILS, VOLATILE. — Volatile oils are obtained by distillation, water being put into the still along with the plant, in order to prevent the latter from being burnt. It is to the presence of a volatile or essential oil that aromatic plants owe their flavour. Volatile oils burn in the open air with a clearer light, and the sole products of the combustion are water and carbonic acid. They do not readily unite with the metallic oxides, and are attacked with difficulty even by the alkalies. They dissolve sulphur in large quantity, forming a deep brown-coloured liquid, called balsam of sulphur. The solution is best made by boiling flour of sulphur in spirit of turpentine. Phosphorus may likewise be dissolved by the same menstruum.

OLIVES.—The fruit of the olive tree. In their natural state olives are bitter, acrid, and exceedingly disagreeable; though their taste is much improved when pickled, as we receive them from abroad, particularly the smaller kind, or Lucca olives. Those of Provence are esteemed excellent. On account of the abundance of oil they contain, they are not adapted to delicate stomachs, and are pernicious, especially when eaten for dessert, after a heavy dinner. Though pickled olives are grateful to the stomach, and are supposed to promote appetite and digestion; the ripe ones are more eaten among the Greeks, forming a considerable part of their food, especially in Lent. There are three kinds of olives frequently sold, different in size and quality; namely, those of Verona, in the northern parts of Italy, those of Spain, and those of the south of France.

OLIVE OIL.—Olives yield an oil which is the most popular and most universal of all others; being that chiefly used in medicine, in foods, salads, and in various manufactures. It is drawn or squeezed from the fruit by presses, or mills, for the purpose. The consumption of this oil is incredible, and it is reputed one of the most useful things in the world. In the bite of the poisonous serpents of this country, taken internally shortly after the wound, and externally applied, it has been extolled as a specific. The sweetest and the most esteemed comes from the southern parts of France, but vast quantities are imported from Florence and Lucca.

The medicinal properties of olive oil are demulcent, emollient, emetic, and anthelmintic. It is given in jaundice from gall-stones obstructing the flow of bile, in colic, catarrhal affections, and in cases where metallic poisons, and other acrid substances have been taken into the stomach, in the absence of more active substances. It is also used in clysters. To excite vomiting it is given from four to six ounces. For other purposes, the dose is from half an ounce to an ounce and a half mixed with water, by means of some mucilaginous fluid, as gum arabic or the yolk of an egg, or a few drops of liquor of ammonia, which will cause the oil to blend with the water, and render it one uniform mass.

Olive oil, with butter, constitutes what is called the oleaginous condiments. When used as a seasoning to raw vegetables, it checks their fermentation in the stomach, and thereby prevents them from becoming too flatulent. Used in this manner in small quantities, it proves a help to digestion; but when taken in considerable quantities, it has an opposite effect, and lays the foundation for bilious complaints.—See *Salads*.

Olive oil is frequently adulterated with oil of poppy seeds, which may be easily detected by exposing a sample to the freezing temperature, when the olive oil will congeal, while that of the poppies will remain fluid. —*New Lond. Med. Pocket Book*, p. 222.

ONIONS.—The best onions are brought out of Spain and Portugal. They are eaten in a raw state as well as boiled, and are used in salads. Also shalots, leeks, rocambole, and chives. They are stimulating, and assist digestion, relieve the bowels, expel flatulency, dissolve slime, or mucus, and are therefore beneficial in diseases which proceed from too much viscidity; besides, they increase the appetite, and ought to be used principally in the raw state, as spices or medicines. They are powerfully expectorant, but should be avoided, or very sparingly used, by very hot, irritable, and choleric constitutions. Although these roots are eaten abundantly by whole nations, yet, from their penetrating and volatile smell, which they communicate to the human breath, it is certain they agree best with individuals of a cold and phlegmatic habit, and those whose stomachs require so powerful a stimulus.

The workmen, to the number of 100,000, according to Herodotus, employed for thirty years in building the pyramids of Egypt, expended 1600 talents of silver in radishes, leeks, onions, and garlick, a sum amounting, according to different calculations, to about 400,000*l*. The Hebrews, in the wilderness, complained that manna grew insipid to them; they longed for the leeks and onions of Egypt. Travellers assure us that in Greece and Africa raw onions are excellent. Pliny reproaches the Egyptians with swearing by the leeks and onions of their gardens; and Juvenal ridicules that superstitious people, who did not dare to eat leeks, garlick, or onions, for fear of injuring their gods.

'T is mortal sin an onion to devour!
Each clove of garlick is a heavenly pow'r:
O holy nations, and O sacred clods,
Where ev'ry fruitful orchard teems with gods. SAT. xiii.

Garlick is nearly entirely superseded in England, such is the aversion taken to it; though occasionally a dish is rubbed with a clove to give it a flavour. The shalot, or rocambole, usually supply its place. It must, however, be left to the unprejudiced epicure to say which he would prefer. Indeed, it is acknowledged, notwithstanding the rooted aversion to this condiment, that garlick, of all our plants, has the greatest strength, affords most nourishment, and supplies most spirits to those who eat little flesh. It seems to have been a considerable article of food in ancient times; and with our Continental neighbours is far from having grown into desuetude. The slender green tops of leeks and chives enter well into compound salads; and are among our best pot-herbs.—See *Garlick, Leeks, &c.*

ORACH.—Similar to blite, and not much differing in virtues, though rather inferior. They are aperient; and rather hurt than assist digestion, unless the constitution be strong, cold, dry, or choleric.

ORANGE.—The fruit of a tree of the same name. Those in common use with us are the Seville and China oranges. The flowers of the Seville orange are highly odoriferous, and very justly esteemed one of the finest perfumes. The outer rind is an excellent carminative, and tonic to the intestines. The essential oil is stimulant, but does not agree with the stomach. The tincture of orange-peel is an useful preparation. So is the following. *Take*—

Of Seville orange-peel,	3 drachms.
Fresh lemon-peel .	2 drachms.
Ginger, the root . .	½ drachm.
Barley water . . .	½ pint.

Macerate for two hours. Then *Take*—

Of the strained liquor,	1½ ounce.
Spirit of peppermint, Tincture of lavender, each	½ drachm.

Make a draught to be taken twice a day,—in windy colic, or habitual flatulency, &c. The juice of Seville and China oranges is a pleasant acid, and of great use in inflammatory and putrid disorders, both acute and chronic; it is an useful refrigerent in inflammatory diseases, and an excellent antiseptic in scorbutic and putrid complaints. When Commodore Anson sailed round the world, his men were surprisingly recovered from the scurvy by the oranges which they found at the island of Tinian, one of the Ladrone islands in Asia. The sweet or China orange was first brought into Europe by the Portuguese; and it is asserted that the identical tree, whence all the European orange-trees of this sort were produced, is still preserved at Lisbon. Those most esteemed, and which are made presents of in India, are no bigger than a billiard-ball. The Maltese oranges are said to be the finest in the world.—The juice of the Seville orange is preferred to that of the lemon: the flavour is finer and the acid milder. —See *Lemon*.

ORANGE FLOWER.—Used both in food and physic. It is preserved whole, and by distillation a liquid of a very pleasant smell is extracted. It is much used as a cordial in hysterical and cephalic cases. The orange-flower water helps digestion; it also refreshes and exhilarates the mind. The leaves should have an agreeable smell, and be fresh gathered for use.

ORTOLAN.—A bird about the size of a lark, though rather smaller if any thing; is usually very fat, and of various colours; the beak and legs are inclined to red. It feeds upon several sorts of seeds, but millet is that on which it soonest fattens. It is a native of the southern parts of Europe, as Italy and the south of France. The flesh of this bird is tender, delicious, juicy, and of exquisite savour. It is strengthening, nutritive, and easy of digestion, and agrees with all constitutions.

OSMAZOME.—The essence of flavour. The pure element, which gives to the delicacies of the animal kingdom all their flavour, and all their richness; in a word, it is the delicious and pure element which constitutes the rich flavour of game, venison, and turkey, as well as of the more common articles, as veal, lamb, and sucking-pig. The savoury perfume developed in roasting, &c.

The name osmazome was invented by M. Thenard (vide *Traite de Chimie*, vol. iii.) though it is to his countryman M. Rouelle that we are indebted for the discovery, and who of course merits our warmest eulogies both as a gourmand and an epicure. The following is M. Thenard's process for obtaining pure osmazome.—Divide a piece of rump steak, or lean of any sort of meat, into small fragments, and cover it for an hour or two with cold water, pressing it occasionally to squeeze out the juice. Pour off the water, and preserve it, and add a fresh quantity, repeating the same process two or three times. Mix the several waters in a flat basin of china or porcelain, and evaporate till part coagulates, and part remains liquid, the latter of which is to be filtered and evaporated by a gentle heat to the consistence of a syrup, which will be of a deep rich colour: still it is impure and requires ulterior fining. This is done by pouring upon it some of the best spirit of wine, which only dissolves the osmazome, and refuses to take up any remaining animal impurity. The osmazome being now procured in conjunction with the spirit of wine, the latter requires only to be evaporated to produce the genuine osmazome, which is of a rich yellow brown colour, and of an exquisite flavour. Osmazome is not only the most digestible, but the most nourishing element which meat contains. It abounds in the browned savoury crust of roast meats, which owe, indeed, all their piquancy and relish to the osmazome developed on the spit.

OXYGEN.—One of the most essential and component parts of the air we breathe. Oxygen gas was discovered by Priestley in 1774, and by Scheele a year or two afterwards, without any previous knowledge of the discovery made by Priestley, who named it dephlogisticated air; by Scheele it was called empyreal air, and by Condorcet vital air.

Oxygen is so necessary to respiration, that no animal can live in an atmosphere which does not contain a certain uncombined portion of it; for an animal soon dies if put into a portion of air from which the oxygen has been previously removed by a burning body. It may therefore be anticipated, that oxygen is consumed during respiration. (See *Respiration*). If a bird be confined in a limited quantity of atmospheric air, it will at first feel no inconvenience; but as a portion of oxygen is withdrawn at each inspiration, its quantity rapidly diminishes, so that respiration soon becomes laborious, or soon ceases entirely. If another bird be then introduced into the same air, it will die in the course of a few seconds; or, if a lighted candle be immersed in it, its flame will be extinguished. Respiration and combustion, therefore, have the same effect. An animal cannot live in an atmosphere which is unable to support combustion; nor can a candle burn in air which is unfit for respiration. Oxygen may be obtained from several sources. The substances commonly employed for this purpose are the peroxide of manganese and chlorate of potash. It is colourless, and has neither taste nor smell; it reflects light very feebly, and is a non-conductor of electricity. It is heavier than atmospheric air.

OYSTERS.—Colchester in Essex, and Milton and Queenborough in Kent, are particularly celebrated for fine oysters. They adhere to rocks at the bottom of the sea, and to the keel and helm of ships; but they avoid as much as possible all places abounding with plants and *alga marina*, because the fat slime produced by these plants would suffocate them, and their spawn would corrupt and perish in a calm sea. In viewing them attentively by the microscope, a milky fluid is seen, which may be called the seed or spawn of oysters, and of all other testaceous fishes. This liquor is found to be composed of a number of small eggs, which float in a viscid humour; and each of these eggs contains an oyster, or an animal of its species. They are very good for eating when they are full of this fecundatory humour, and as long as the eggs in their ovaria continue white, and have not yet assumed the form of an oyster; but when their substance has once arrived at this point of perfection, and is organised, then the fecundating humour grows thick and blackish, and every one of the little oysters begins to be covered with a small shell; then the mother oysters become hard, and cease to be good as food. The same happens when they have shed their melts, or cast their spawn; for their belly dries up, and the rest of their flesh, their muscles and their beards, as commonly called, harden and become more solid.

The prolific liquor of oysters does not acquire its degree of maturity till the end of the spring; they shed it during the whole summer. This liquor, which floats on the water, fastens, by the means of its viscidity, to rocks, stones, or any thing it meets with in the sea; and the little oysters finding a suitable aliment, grow in a short time. Because they have no progressive motion, Aristotle called them aquatic plants! A great number of them perish before they receive any growth; as, for instance, all the spawn that adheres to the sea-weed, or a too liquid slime, is corrupted by the badness of the aliment or the place; though, indeed, the crabs which frequent among marine plants, seem to thrive there, and are very fond of such nourishment.

Oysters are consumed, under one form or another, in such numbers, as to have become a valuable article of commerce: to give some idea of its extent, and of the number of hands to which it gives employment, it may be sufficient to mention the oyster fisheries alone. In the rivers of this country, more particularly in the Crouch, the Blackwater, and Colne, a great variety of excellent oysters are bred. The boats employed in dredging them are from fourteen to thirty or forty tons burthen; and the fitting out of one of twenty tons will require 160*l*. Of these small craft above 200 are now employed, worked by upwards of 300 men and boys.

The quantity of oysters taken in a season is computed to exceed 20,000 bushels, which are chiefly disposed of in London; but they are likewise sent to Hamburgh, Bremen, Holland, France, and Flanders. So important, indeed, are the oyster-fisheries of Great Britain, that they have long been an object of attention to the legislature; and they are regulated by a court of admiralty. In the month of May the fishermen are allowed to take the oysters, in order to separate the spawn from the cultch, the latter of which is thrown back, to preserve the bed for the future. All this month it is felony to carry away the cultch, and punishable to take any oyster, unless, when closed, a shilling will rattle between its valves. The spawn is then deposited in beds or layers formed for the purpose, and furnished with sluices, through which, at the spring tides, the water is suffered to flow. This water, being stagnant, soon becomes green in warm weather; and in a short time the oysters acquire the same tinge, which renders them of greater value in the market. Three years, at least, are necessary to bring them to a marketable condition; and the longer they remain, the more fat and delicate they become. Those artificial beds mentioned by Pliny, were invented by one Sergius Arata, and first established on the Lucrine Lake, A. U. 630; and from some circumstances mentioned by the naturalist, it may be inferred that Sergius was no loser by the speculation. In Scotland there are none of them, but oysters are eaten just as brought from their native rocks; and though certainly inferior to the genuine "Pyefleet," yet they are no despicable dainties. The oyster is a bivalve shell, and there are many others of this kind which are edible. Indeed, none of them, as far as we know, are positively hurtful; though some of the spondyli are hard and disagreeable, others occasionally act as poison at particular seasons, or to peculiar constitutions, and many are so small or so rare as never to have been used. The pecten maximus, for example, is a much-esteemed species; and the clam (pecten opercularis) is very commonly eaten in Scotland. The anomia undulata, at Bourdeaux, is considered as a delicacy; while on some parts of the shores of the Mediterranean, the rocks are broken with large hammers in order to procure the pholas dactylus, which abounds there, and is admired even at the tables of the luxurious. The razor-fish (solen selequa) common on our sandy shores, is an article of food in many places; and when they go to its capture, the Irish are said to have a song appropropriate to the occasion, whence we may infer that it is a favourite with them. The natives of Orkney and Shetland sup luxuriously on a dish made of the animal of the Mya truncata, and named smurslen; and on many parts of the coast of England great numbers of cockles (cardium edule) are gathered, particularly in spring, and in autumn an equal number of muscles (mytelus edulis), which are eaten roasted, boiled, or pickled, or by entering into the composition of sauces, add to the flavour of more substantial viands.

Oysters are eaten both raw and dressed: in the former state, they are in every respect preferable; for by cooking, they are deprived of the salt water, which promotes their digestion in the human stomach, as well as of a great proportion of their nutritive jelly. Raw oysters are easily digested, and may be eaten with great advantage, by the robust, as well as by the weak and consumptive, as this shell-fish possesses more nutritive animal jelly than almost any other. Moreover, they are generally attended with a laxative effect, if eaten in any quantity: hence they afford an excellent supper to those subject to constipated bowels. Oysters when eaten in the raw state, are by no means distressing to weak stomachs; and they are so easily acted upon in the stomach as to require little or no aid from the digestive power. In a cooked state, they are certainly harder, in consequence of the change produced upon the albumen they contain. They contain a considerable quantity of nutritive matter within a small compass; and it is only with coarse palates that condiments with them, such as pepper and vinegar, are allowed to be an improvement. Instances of oysters having ever produced a fit of indigestion are very rare indeed. In fine, those whose digestive organs are most deranged, resort to oysters as a sort of pabulum best adapted to that condition of the stomach. They cast their spawn, which by the *dredgers* is called spat, in the month of May, after which they are sickly and unfit for food; but in the months of June and July, they begin to recover; and in August, at the commencement of which month they are brought to the London market, they are in excellent perfection.—The Colchester, Pyfleet, and Milford oysters, are esteemed the best; though the native Melton are reckoned very good, being the fattest and whitest. They are known to be alive and vigorous when they close fast upon the knife, and let go as soon as they are wounded in the body.

Montanus, a famous Roman epicure, is commemorated by Juvenal for so exquisite a taste, that he knew the oysters of Rutubian bay at the first taste. This bay was in the vicinity of Sandwich in Kent, and is at present, in consequence of the receding of the sea, a fertile meadow affording the most luxuriant pasture for cattle.

P.

PANADA.—Bread soaked in milk, used principally for quenelles and fine farces.

PANCREAS.—A glandular body, vulgarly called the sweet-bread, of a long figure, compared to a dog's tongue, and situated in the epigastric region, under the stomach. The pancreatic duct perforates the duodenum with the common choledoch duct, which sends the bile there, and conveys its secretion, a fluid similar to the saliva, into the same channel. Although the granulous structure of the pancreas has induced anatomists to regard it as a salivary gland, M. Majendie, nevertheless, observes, that it differs in the smallness of the arteries which supply it, as well as in not appearing to receive any cerebral nerve. As we descend in the scale of animals, the pancreas disappears: it is found in the shark and skate, but in other fishes its place is supplied by *cœcal appendages*, which afford a copious secretion, analogous to the pancreatic juice; a peculiar fluid necessary to digestion, though we are still ignorant of the particular duty assigned to it.

The excretion of the pancreatic juice is augmented by the same causes which affect the saliva—namely, by pressure and stimuli. By the former it is emulged, whenever the stomach, in a state of repletion, is incumbent upon the pancreas. Its use is to assist in the formation of the chyle, or that fluid into which the nutritive particles of our aliment is converted. It is of a limped colour.—The quantity of fluid prepared by the pancreas, does not appear to bear a just proportion to its size. Attempts have been made by Dr. Fordyce, and M. Majendie, to collect the pancreatic liquor, by inserting a quill into the duct in a living dog, although the experiments made by both do not appear to have been very satisfactory. It is the opinion of modern physiologists, that the gastric juice is the agent by which digestion is effected; but they are by no means so unanimous as to the immediate cause of chylification. It is not improbable that the intestinal juice takes a principal part in this process, although its qualities have not yet been inquired into; for, indeed, the investigation would be attended with almost inseparable difficulties. Since the bile and pancreatic liquor are poured into the intestines at a small distance from the stomach, it is natural to consider these fluids as useful in effecting the change which the alimentary matter undergoes in the small intestines—namely, its conversion into chyle. The chyme or aliment digested by the stomach, being rancid, the pancreatic juice has been considered as an useful and necessary diluent, and perhaps this fluid may have other properties with which we are unacquainted.—See *Abernethy, on the Constitutional Origin and Treatment of Local Diseases,* p. 31.

PARSLEY, (*Apium Petroselinum*).—Parsley, as well as smallage, is of a sweet, stimulating, and aromatic nature. The former especially was by the ancient physicians supposed to purify the blood; an effect which modern medical observers would not only doubt but even ridicule. So much, however, is certain, that parsley is a mild aperient and diuretic. Yet for these salutary purposes it ought not to be eaten in a raw, but boiled state. It is not a very convenient herb in salad; still it is eaten in various ways, and frequently at breakfast on bread and butter. The indigenous spicy and balsamic herbs, as parsley, marjoram, thyme, sage and the like, cannot be too much recommended for culinary purposes, especially in broths; as they are well calculated, by their aromatic virtues, to assist the digestion of many strong articles of food which daily cover our tables; and these excellent herbs are not liable to the adulterations with which most of the foreign spices are contaminated.

PARSNEP, (*Patinaca Sativa*).—Besides their sweet mucilage, parsneps contain somewhat of the aromatic principle, being more nourishing and less flatulent then carrots. To deprive them entirely of the latter quality, they ought to be boiled in two different waters, but by this precaution they partly lose their sweet taste, and become less nourishing. First boiled, it is eaten cold as a winter salad, with oil and vinegar. If not well boiled, parsneps are rather difficult of digestion; they are very nutritious from the quantity of saccharine matter they contain, and in consequence of which they afford a very pleasant drink called parsnep wine. There are two sorts of parsneps, the garden and the wild: the former is to be preferred because it is thicker, tenderer, and much more agreeable to the taste and smell.

PARTRIDGE. — A bird much valued for the goodness of its taste. There are several kinds, which ought to be chosen while they are young, tender, and well fed. The flesh is restorative, strengthening, nutritious and easy of digestion; but as it becomes old, the flesh is hard, difficult of digestion, and unpleasant to the taste. The red partridge is more esteemed than the others. It agrees in cold weather with all ages and constitutions; but more especially with persons recovering from sickness and those who are of a cold and phlegmatic temperament.

Our partridges are nearly as large

as a pigeon, and in some places larger. Strabo *(lib.* xv.) says, that Porus king of India, made a present to Augustus, of a partridge that was larger than a vulture. And red ones in the isle of Chio, have been mentioned as large as hens. White partridges are found in several places, in the alps, mountains of Switzerland, and Tyrol; as also ash-coloured ones and others of different hues in various other parts; and all very well tasted. They usually live to the age of fifteen or eighteen years; and, according to Aristotle, some live so long as twenty-five years. They cannot raise themselves high from the earth, being a heavy bird, but they fly with much force and activity.

PASSER.—In the culinary art, to fry lightly.

PASTES, FRUIT.—Fruit pastes, jams, and marmalades, are compositions of the pulpy matter of recent fruits, or other vegetable substances, so combined into a mass with sugar, as will cause them to suffer as little alteration as possible in their native properties. These comfitures are, therefore, in reality, solid extracts of the pulpy matter of fruit conserved by means of sugar. The evaporation of the mass is most conveniently performed in broad hollow vessels; and the larger the surface of the vessel, the sooner will the aqueous parts exhale. When the pulpy matter begins to grow thick, great care is necessary to prevent its burning. This accident is almost unavoidable if the quantity be large, and the fire applied as usual, under the pan; it may, however, be effectually prevented by pouring the mass, when it has acquired the consistence of syrup, into shallow earthen pans, and placing them in an oven, with its door open, moderately heated; which, acting uniformly on every part of the liquid, will soon reduce it to any degree of consistence required. And this may also be more securely done by setting the evaporating vessels in boiling water; though this is rather a tedious method. The application of steam to what is called a *preserving pan*, is the best contrivance for preparing jams, fruit pastes, and all other culinary preparations which are liable to get injured by any degree of heat exceeding that of boiling water.

To make Apricot Paste.—Take ripe apricots, boil them till quite soft, mash them, and rub the mass through a splinter sieve; put the pulp into a pan, and to every pound put half a pound of powdered loaf sugar; set it again on the fire to simmer, till the paste drops off easily from the spoon, then take it from the fire and pour it on a slab.

N.B. Peach, quince, plum, cherry, and black-currant paste, &c., may be prepared in the same manner.

2. *Almond Paste.*—Sweet almonds decorticated, one pound; bitter almonds, the same, half an ounce; sugar, one pound; orange flower water, a sufficient quantity; beat to a paste stiff enough not to stick to your fingers.

3. *Almond Paste for Orgeat.*—Boil the almonds in water until the skin parts easily—strain, throw the almonds into cold water, blanch them, and dry, either in the sun or stove, till they are brittle. To each half pound of blanched almonds, add as much Italian melon seed, steep in cold water, four pints, for five or six hours; strain off the water, except about four or five ounces, reduce them to a fine paste, adding powdered sugar, 1½lb. This paste may be dried in a stove, that it may be kept for some time.—See *Almonds.*

PASTE, THICKENING.—It is customary in the culinary regions to thicken some dishes, broths, soups, gravies, &c., with a compound of two parts of flour, and one of butter, first made into a paste, by beating slowly the ingredients in a pan, till the mass acquires a yellow gold colour, the flour and butter being stirred all the time to prevent the mass from burning to the bottom of the pan. The substance thus obtained is called thickening, or thickening-paste; for it is the basis employed by cooks for thickening soups, gravies, stews, sauces, and other dishes. The mass readily combines with water. A large tablespoonful is sufficient to thicken a quart of meat broth. Beside this thickening paste, other farinaceous substances are employed for the same purposes, such as bread raspings, crumbs of stale bread, biscuit powder, potatoe mucilage, oatmeal, sago powder, rice powder, &c. A cow-heel, on account of the vast quantity of gelatine with which it abounds, is excellently well calculated for giving body to soups: the cowheel, after been cracked, is boiled with the broth or soup. —See *Soups, Gravies, Broth, &c.*

PASTRY.—Various compositions prepared by the pastry cook and confectioner. These dainties would be less objectionable if any method could be devised to prepare them without the pernicious ingredients of yeast and fat substances, which load the stomach with a glutinous slime and rancid matter, obstruct the glands of the abdomen, particularly those of the mesentery, and have a strong tendency to produce cutaneous diseases.

PEACH, (*Amygdalus Persica*, L.) —A delicious fruit abounding with juice, and though not very nourishing, they do not cause diarrhæa. This salutary fruit was formerly decried as unwholesome; but it is rather serviceable in obstructions and bilious disorders. Sugar, wine, and the like, diminish the good qualities of peaches; and even when preserved in brandy, they are not so wholesome as when fresh; since they become hard by artificial preparations. The kernels likewise of peaches are a wholesome bitter, and are cleansing, on account of their astringent properties. The kernels, leaves, and flowers, contain prussic acid, which they yield by distillation; the former, consequently, ought to be used sparingly.—See *Prussic Acid.*

It is a dessert fruit, of the first order, and makes a delicious preserve. In Maryland and Virginia, a brandy is made from this fruit.—"The manufacture of this liquor, and the feeding of pigs, being," as Braddick observes, (*Hort. Trans.* ii. 205), "the principal uses to which the peach is applied in those countries." The leaves, steeped in gin or whiskey, communicate a flavour resembling that of noyeau.

As there are several kinds of peaches of an inferior quality, it will be useful to point out the distinguishing marks of that fruit in a mature state. The best sort of peaches have a delicate thin skin, which is easily separated from the pulpous part. Those which are naturally smooth, ought to be covered with only a small quantity of down; for too much down or wool on the surface, is a sign of their inferior quality. They are likewise not to be depended upon as wholesome, if they are of a size either too small or unusually large. Their pulp ought to be delicate, yet solid, somewhat fibrous, and full of juice; it should not adhere to the stone or kernel, and ought readily to melt in the mouth. "A good peach," observes Miller, "possesses these qualities,—the flesh is firm; the skin is thin, of a deep or bright red colour next the sun, and of a yellowish green next the wall; the pulp is of a yellowish colour, full of high flavoured juice; the fleshy part thick, and the stone small."

PEAS.—Green peas as well as French beans, boiled in their fresh state, are equally agreeable and wholesome; for they are less flatulent and more easy of digestion, than in their ripe state. It deserves to be remarked, in general, that all vegetables of the pulse kind, as they advance in growth, become more oppressive to the stomach, and consequently less salutary in their effects; and yet, persons with whom this kind of pulse agrees well, are apt to experience a degree of flatulence and torpor after eating them, in consequence of the fixed air, which, in common with other vegetables, they contain. Those who are fond of pea-soup, would better consult their health, by boiling the peas whole, than split and deprived of their husks; for these promote the grinding of the peas, and prevent them from turning acid in the stomach, which split peas readily do. They are also apt to occasion oppression in the bowels, and a very troublesome heartburn, in some constitutions. The pod of the sugar pea, first appearing with the husks and tendrils, affords a fine acid, enters into the composition of salads, as do those of the hop and vine. Leguminous productions, as beans, peas, lentils, and the like, all contain a solid mucilage or gluten, and afford a rich and strong nutriment, which best agrees with a vigorous stomach. They have also a considerable portion of crude particles, which cannot be assimilated to our fluids, and must therefore remain undigested in the bowels, to the great detriment of the alimentary canal. The meal of the leguminous class is digested with more difficulty than that of grain; besides, it contains much fixed air, from which it is extremely flatulent, is apt to occasion costiveness, and to communicate various kinds of acrimony to the blood. These effects, however, it produces only when used frequently and copiously. Hence, bread made of peas or beans, either alone or mixed, and ground together with wheat, is improper for daily use. It must not, however, be imagined, that even the most wholesome articles of food are altogether free from air: this element is a necessary and useful ingredient to promote the digestion of alimentary substances. The proportion of fixed air varies extremely in different vegetables: all the leguminous plants particularly abound with it: and even persons with whom they agree well, must have experienced flatulency and torpor, after a copious use of peas and beans.—See *Vegetables*.

PEARS.—Some pears are extremely hard, astringent, and difficult of digestion; but the more juicy pears have a sapinaceous, mellow, nourishing, and digestible fluid : in their effects, they resemble the sweet kind of apples, except that they are less relaxing to the bowels. Pears are of a more flatulent tendency than plums, peaches, or apricots, (which see)—especially the hard winter pears, which are eaten at a time when the stomach requires stimulating rather than cooling food.

Pears contain but little acid, while they have generally more sugar, and above all, more woody fibre, which is of course indigestible. Those which are not so hard and solid, contain, along with their sugar, a considerable proportion of mucilage; which, though it is nourishing, is apt to go into fermentation in the stomach and produce flatulence. The very hard sort of pears ought to be prohibited to weakly persons, as their great quantity of woody fibre will only load and fatigue the stomach. The astringent sorts produce costiveness—the sweet and mellow are laxative, and to some constitutions prove salutary. They sit all heavy on weak and flatulent stomachs.

PATÉ.—A raised crust pie.

PEPPER.—Pepper is the product of a shrub growing in several parts of the East Indies. Black pepper is an aromatic fruit of a hot dry quality, chiefly used in the seasoning of meats. White pepper is the fruit of the same pepper with the black, and prepared from it by taking off the outer bark. Pepper, which is sold ground, is very apt to be sophisticated; the black, with burnt crust of bread, and other materials; the white with beaten rice. *Long pepper* is thus denominated from its form, which is cylindrical, about an inch and a half in length, and of the thickness of a large goose quill. It is of the same genus as the black pepper, but is hotter and more pungent: its chief use is in medicine, where it enters several prescriptions. *Guinea pepper* is a native of both the Indies, and raised in some of our gardens. It is of a red colour, and of an extremely pungent and acrimonious taste. It is sometimes given in small quantities, as one of the highest stimulants; but its principal use is at table. (See *Capsicum*). A species of this pepper is the basis of the powder brought from the West Indies under the name of Cayenne. *Jamaica pepper* is the fruit of a tree growing plentifully in Jamaica, and other West India islands. It is a real aromatic, and may supply the defect of cloves, nutmegs, and cinnamon; whence it is called by the English, *allspice*, and sometimes pimento. This pepper is accounted the best and most temperate, mild, and innocent of common spices; promoting digestion, and strengthening the stomach.—See *Cubebs, &c.*

The different species of pepper, being very heating and stimulating, ought to be used sparingly and with precaution; yet their peculiar warming and stomachic virtues make them an excellent spice, and proper to be used with fat, tough, and smoked meat, with flatulent vegetables, with cucumbers and melons, as well as with fish, and other substances difficult of digestion. For these purposes pepper ought to be coarsely ground. If taken in whole grains, it imparts to the stomach only a small part of its virtues, and cannot be reduced in digestion. In this form it is an old and effectual domestic remedy of the Germans, against viscidity in the stomach, flatulency, weak digestion, and consequent giddiness. With this intention, from six to ten grains should be swallowed in the morning on an empty stomach. Yet this is not advisable, unless to stomachs vitiated or long accustomed to the use of spices and spirituous liquors, with which aromatics may serve as a substitute for drams. Pepper forms the basis of Ward's celebrated paste for fistula, namely, black pepper, two drachms; elecampane and fennel seed, of each half an ounce; mixed up with honey, so as to form an electuary, of which a teaspoonful is ordered to be taken two or three times a day.

Pepper being of universal use to correct the cooler herbs, and such as abound in moisture, is an ingredient never to be omitted in salads, provided it be not minutely ground, in which state it is very pernicious, and frequently adheres and sticks in the folds of the mucous lining of the stomach; when, instead of acting as a corrector, it often causes the heartburn, and, consequently, as already observed, it should be but coarsely bruised.

PERRY.—The juice of pears extracted and fermented. In colour and taste it resembles white wine. Bitterish and hard pears are the best for this purpose. It possesses nearly the same properties as cider.

PERSPIRATION.—The vapour secreted by the extremities of the cutaneous arteries from the external surface of the body. It is distinguished into *sensible* and *insensible*. The former is separated in the form of an invisible vapour, the latter so as to be visible in the form of very little drops adhering to the epidermis. The *secretory organ* is composed of the extremities of the cutaneous arteries. The *smell* of the perspirable fluid in a healthy man, is fatuous and animal; its *taste* manifestly salt and ammoniacal. In *consistence* it is vaporous or aqueous, and its *specific gravity* in the latter state is greater than that of water. For the most part it is yellowish, from the passage of cutaneous oil and sebaceous matter of the subcutaneous glands. Whatever form the perspiration takes, according to Thenard, it is composed of a great deal of water, a small quantity of acetic acid, of muriate of soda and potass, a small quantity of earthy phosphate, an atom of oxide of iron, and a trace of animal matter. Berzelius, a Swedish chemist, considers the acid of sweat not the same as acetic acid, but like the lactic acid of Scheele. The skin exhales, besides, an oily matter, and some carbonic acid. Berthollet, who also has observed the perspiration acid, concludes that the acid which is present is the phosphoric: but this he has not proved. Many experiments have been made to determine the quantity of transpiration formed in a given time, and the variations that this quantity undergoes. The first attempts are due to Sanctorius, who, for upwards of thirty years, weighed every day, with the greatest nicety and patience, his food and his drink, his solid and liquid excretions, and even himself; but in spite of his zeal and perseverance, his results were neither exact nor conclusive. Since the time of Sanctorius several philosophers and physicians have been occupied with the same subject, with better success; but the most remarkable labours in this way are those of Lavoisier and Seguin. The following are the results of their experiments:—

1. The greatest quantity of the insensible perspiration (the pulmonary included) is 25.6 grains troy per minute; consequently, 3 oz. 1 drachm 36 grains per hour, and 6 lbs. 4 oz. 6 drs. 24 grs. in twenty-four hours.

2. The least considerable loss is 8.8 grains per minute; consequently, 2 lb. 2 oz. 3 drs. in 24 hours.

3. It is during the digestion that the loss of weight, occasioned by insensible perspiration, is at its minimum.

4. The transpiration is at its maximum immediately after dinner.

5. The mean of insensible transpiration is 14.4 grains per minute; in the mean 14.4 grains, 8.8 depend on cutaneous transpiration, and 5.6 on the pulmonary.

6. The cutaneous perspiration alone varies during and after repasts.

7. Whatever quantity of food is taken, or whatever may be the variations of the atmosphere, the same individual, after having augmented in weight by all the food that he has taken, returns, in twenty-four hours, to the same weight nearly that he was the day before, provided he is not growing, or has not eaten to excess. The sweat is more or less copious in different individuals, and its quantity is perceptible in the inverse ratio of that of the urine. All other circumstances being similar, much more is produced during digestion than during repose. The sweat in a healthy state very sensibly reddens litmus paper or infusion; and though colourless it stains linen. Its smell is peculiar and unsupportable when it is concentrated, which is the case in particular during distillation. It varies in respect to—

1. *The temperature of the atmosphere.* For instance, men have a more copious, viscid, and higher coloured sweat in summer than in winter, and in warm countries than in colder climates.

2. *Sex.* The sweat of the male smells more acrid than that of the opposite sex.

3. *Age.* Young people are more liable to perspire than the aged.

4. *Ingesta.* A sweat having the smell of garlick is perceived after eating that root; a leguminous, from peas; an acid, from acids; a fœtid, from animal food only; and a rancid sweat from fat foods, as is remarked

in Greenland. A long abstinence from drink causes an acrid and coloured sweat; and the drinking a great quantity of cold water in summer, a limpid and thin sweat.

5. *Medicines.* The perspiration of those who have taken musk, even moderately, and assafætida, or sulphur, smells of their respective natures.

6. *Region of the body.* The sweat of the head is greasy; on the forehead it is more aqueous; under the arm-pits more unctuous; and between the toes it is very fœtid, forming in the most healthy individual blackish sordes.

7. *Diseases.* As regards diseases, it varies considerably in regard to quantity, smell, and colour; for the perspiration of gouty persons is said to turn blue vegetable juices to a red colour. Some men also have a lucid sweat; others a sweat tinging their linen of a sky-blue colour.

The uses of both the insensible and sensible perspiration are to carry off superfluous materials, eleminate and purify the fluids, to moisten the external surface of the body, to counterbalance the suppressed pulmonary transpiration of the lungs, for when this is suppressed, the cutaneous one is increased; to supply a watery secretion, for when the urine is deficient, the perspiration is more abundant, &c.

PERSICA. — The peach. — See *Almonds and Peach.*

PHLEGM.—A thick and tenaceous mucus secreted in the lungs. *Chem.* Water from distillation.

PHŒNIX. — The name of a genus of plants. Class, *Diœcia;* order, *Trian.*

PHŒNIX DACTYLIFERA.— The systematic name of the date-tree. (The *Phœnix—frondibus pinnatis; foliolis ensiformibus complicatis of Linnæus*). The fruit is called dactylus or date. It is fleshy, of an oblong round form, about an inch and a half long, and one in diameter, and has in its centre a hard stone. Before they are ripe, dates are rather rough and astringent; but when perfectly matured, they are much of the nature of figs. (See *Fig*). The dates of Senegal are much esteemed, and possess a more sugary and agreeable flavour than those of Egypt and other places.—See *Dates.*

PHYSIOLOGY.—A science which has for its object the knowledge of the phenomena proper to living bodies. It is divided into vegetable physiology, which is employed in the consideration of vegetables; into animal or comparative physiology, which treats of animals; and into human physiology, of which the chief object is man.

PICKLE. — A brine or liquor, commonly composed of salt, saltpetre, vinegar, &c.; sometimes spices are added, in which meats, fruit, and other articles are preserved and seasoned.—See *Drysalting, Hams, Sugar,* in addition to the following:—

1. *Pickle for Meats.* Brown sugar, bay salt, common salt, of each two pounds; saltpetre, eight ounces; water two gallons. Used to pickle meats, which it gives a fine red colour, while the sugar renders them mild and of an excellent flavour.

2. Eight pounds of sugar, and four ounces of saltpetre, boiled for a few minutes with four gallons of water, skimmed and allowed to cool, form a strong pickle, which will preserve meat completely immersed in it. The same may be used repeatedly, provided it be boiled up occasionally with additional salt to restore its strength.—See *Pyroligneous Acid.*

Fish may be pickled either by dry-salting, or in a liquid pickle. The former method is employed to a great extent on the banks of Newfoundland. When a liquid pickle is used, the fish, as fresh as possible, are to be gutted or not, and without delay plunged into the brine in quantity so as nearly to fill the reservoir, and after remaining covered with the pickle five or six days, they will be completely impregnated with salt so as to be perfectly fit to be repacked in barrels, with large grained solid salt, for the hottest climates and longest voyages. — See *Mackerel, Salmon, &c.*

The antiseptic property of vinegar is employed with advantage in domestic economy, for preserving from decay a variety of roots, fruits, and leaves, and other parts of vegetables, which, by a species of refinement and luxury, are often considered as condiments to improve the relish of several kinds of food. The whole art of preparing vinegar pickles consists in impregnating the vegetable substances with the strongest vinegar, to which are usually added a portion of common salt and the most heating spices. To effect this object, the substance to be pickled is usually suffered to macerate, or slightly boiled with the acid, and afterwards kept infused in it, together with spices and salt.—See *Cabbage, Mushrooms, Walnuts, &c.*

The following notice may serve to assist the recollection of the housewife of the time when the various articles for making pickles are in season :—

Artichokes - -	July and August.
Cauliflowers -	July and August.
Capsicum pods	End of July and beginning of August.
Cucumbers - -	Latter end of July and August.
French beans -	In July.
Mushrooms - -	September.
Nasturtium pods	Middle of July.
Onions - - -	Middle and end of July.
Radish pods -	July.
Red cabbage -	August.
Samphire - -	August.
Tomatos, or love-apples	End of July and August.

All pickles should be preserved in unglazed earthenware jars, carefully corked, and tied over with a bladder to exclude air. The vinegar used for preparing them should always be heated in an unglazed earthenware pan, it ought never to boil, but poured over the substance to be pickled just when it begins to simmer. The spices may be simmered with the vinegar.

PIES.—Are those dishes which consist either of meat, or of fruit, covered with a farinaceous crust, enriched with butter or other fat, and rendered fit for eating by baking. The crust of the pie is usually made of two parts by weight of wheaten flour, and one part of butter, lard, or other fat. The flour is made into a stiff paste with cold water, and rolled out on a board with a paste pin to the thickness of about one quarter of an inch, the board being previously sprinkled over with flour to prevent the dough from sticking to it. About one-sixth part of the butter, in pieces of the size of a nutmeg, is put over the extended paste, and the whole again dusted with flour, the paste is then doubled up, and rolled out as before. A like portion of butter is again distributed over the paste, which, after being doubled up, is rolled out, and the same operation is repeated till the whole quantity of butter is thus incorporated with the flour. Part of the paste is then laid, one quarter or half an inch in thickness, over the inside of a deep dish in which the pie is to be baked, and the meat, cut in chops or slices, is put into the dish, together with the seasonings, and a portion of water or gravy, about a teacup-full to one pound of meat. The contents of the basin are then covered with a lid, made of the remainder of the paste, rolled out rather thicker than the inside lining of the dish, and the lid is made to adhere to the inside sheeting, which should extend over the rim of the dish, by pressing the top paste close upon the margin. A few small holes are then made in the top crust, and the pie is put in the oven. The baking should be slow.

If the pie be put into a hot oven the crust becomes hard, and many a cook is blamed for making bad pies, when the fault really lies with the baker. A light and flaky pie-crust can only be produced by the judicious application in the manner stated, of the butter or fatty matter. By this means the butter is distributed, in distinct layers, through the mass of the pie-crust. The flour dusted over each layer prevents the paste forming one mass, or, as it is called, becoming heavy. The more frequently, therefore, the paste is rolled out with butter, lard, or other fat, interposed between each layer, provided the layers are dusted over with flour, the more flaky will be the pie; and hence, also, by increasing the quantity of butter, to a certain limit, the flakeness of the pie-crust becomes increased. Pastry-cooks usually allow from ten to twelve ounces of butter to one pound of flour, for making a light puff paste, such as they use for tarts and patties.

PIGEONS.—There are a variety of the pigeon tribe, which, for our purpose however, we shall simply divide into the tame and wild. The former is well known, and is much used for food. When young the flesh is tender, juicy, and easy of digestion. It is very nourishing, and produces solid and durable food. It is most proper for those whose digestive organs are strong, and are in the habit of taking much exercise even to fatigue.

Aristotle observes that a tame pigeon usually lives eight years, though other authors assert that it has lived twenty-two. The wild pigeon is said to live thirty years, and, according to some, forty years. Thus it appears, that domestication shortens the duration of life.

Pigeons are said to be generally of a dry nature, and to differ little from one another inasmuch as they are more or less so. Their flesh is nourishing, because it contains many oily and balsamic parts, yielding good solid nourishment, in consequence of the compactness of its fibres. As a pigeon grows old, so in proportion does the flesh become drier, more solid, harder of digestion, and fitter to produce gross and melancholy humours; and, on this account, many authors have condemned the use of them, considering them by no means as wholesome aliment. They agree, however, at all times, with every age and constitution, though those of a hypochondriacal temperament should use them more sparingly than others.

PIKE, (*Esox Lucius*).—A well-known fresh-water fish, met with in almost all countries, in rivers, lakes, and ponds. It is seldom found in the sea unless driven there by the rapidity of currents. The river pike is reputed a delicious food, and is easy of digestion. The pike may be called a fish of prey, for it not only devours fishes, but animals of other species, as rats, mice, frogs. Some authors assert that it is difficult of digestion, and that it lies heavy in the stomach; that it produces bad juices from living in ponds, where it feeds on mud, slime, &c.: such bad effects, however, have not been experienced from it; but Jovius ranks the pike in the number of those foods that have an ordinary taste; and Ausonius does not esteem it so much, and that because it does not taste so well in Italy as in France; for it is pretty well known that the taste of pike, in common with other animals, must vary according to the situation and soil on which it is bred.

Care ought to be taken not to eat the roes of pike, as they are known to produce violent vomiting and purging. It must, indeed, be allowed, that all sorts of pike are not alike wholesome, and that those which inhabit ponds and marshy places, living upon slimy and muddy food, consequently not so well flavoured, nor so easy of digestion, and do not produce such rich juices as the river pike.

The pike lives to a great age, a proof of which is afforded by the emperor Frederic II. having thrown one into a pond, to the neck of which a brass ring was attached, with a Greek inscription upon it, of which the following is a translation:

"I am the fish that was thrown into this pond by the hands of the emperor Frederick the Second, on the 5th of October."

It is affirmed that the pike here alluded to lived in the pond 262 years, and at the expiration of that time he was found with the same ring.

PILCHARDS.—The pilchard is a small salt water fish, larger than an anchovy, but smaller than the herring, which in other respects it resembles. They abound in the Mediterranean sea, but are a fish of passage. The chief pilchard fisheries are along the coast of Dalmatia, in the Gulf of Venice; on the coast of France, between Bellisle and Brest, and along the shores of Cornwall and Devonshire. It is a saying among the Cornish-men, that the pilchard is the smallest fish in size, the most in number, and the greatest in gain, of any they take out of the sea—an observation amply confirmed by Borlasse's account of this fishery. The number obtained at one shooting of the net, is amazingly great. The west country people make a pie of pilchards in the following manner:

They clean the white part of some large leeks; scald them in milk and water, and place them in layers in a dish, placing between each layer two or three salted pilchards, which have been soaked for some hours the day before. The whole is then covered with a good plain crust. On taking the pie out of the oven, the side crust is lifted up with a knife, and empty out all the liquor, which they supply with half-a-pint of scalded cream.

PIMENTO.—Commonly called Jamaica pepper. In smell it resembles a mixture of cinnamon, cloves, and nutmeg, whence it has received the name of *allspice*. It is milder than the East India pepper, and is an useful addition to broths and stewed dishes, when used, as it ought to be, in whole grains.—See *Pepper*.

PIMPINELLA.—See *Burnet*.

PINE-APPLES, (*Bromelia Ananas*).—The best come from warm climates; Africa, Spain, and south of France. They are nourishing, and good for consumptive patients, though thepulp is somewhat difficult of digestion. They agree best with people of a dry and bilious temperament. Confectioners preserve them with sugar, after having exposed them for a time to a certain degree of heat in an oven, in order to purify them.

PLANTAIN TREE.—(*Musa Paradisiaca*, L.; called also *Musa*,* *Palma humilis*, *Ficus Indica*, *Bula* and *Platanus*). It grows spontaneously in many parts of India, but has been immemorially cultivated by the Indians in every part of the continent of South America. It is an herbaceous tree, growing to the height of fifteen or twenty feet. The fruit is nearly of the same size and shape of ordinary cucumbers, and when ripe of a pale yellow colour, of a mealy substance, somewhat clammy, with a sweetish taste, and will dissolve in the mouth without chewing. The whole spike of fruit often weighs forty or fifty pounds.

When plantains are introduced to

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* The word *Musa* is corrupted or rather refined, from *Mauz*, the Egyptian appellation of this valuable plant, and is made classical in the works of Linnæus, by an allusion to *Musa* or muse; or with much greater propriety to *Antonius Musa*, the physician of Augustus, who, having written on some botanical subjects, may justly be commemorated in the above name. The name of a genus of plants:—Class Polygamia; order, Monœcia. The plantain and banana tree.

table as a dessert, they are either raw, fried, or roasted; but if intended as a substitute for bread, they are cut before they are ripe, and are then either roasted or boiled. The trees being tall and slender, the Indians cut them down to get at the fruit; and in doing this they suffer no loss, for the stems are only one year's growth, and would die if not cut; but the root continues, and new stems soon spring up, which in another year produce ripe fruit also.

From the ripe plantains a liquor is made called *Mistaw*. When this is made, the fruit is roasted in its husks, and, after totally beating them to a mash, water is poured upon them, and, as the liquor is wanted, it is drawn off. But the nature of this fruit is such that it will not keep long without running into a state of putrefaction; consequently, to reap the advantage of it at all times, cakes are made of the pulp, and dried over a slow fire: and as they stand in need of *mistaw*, these cakes are mashed in water, when they answer all the purposes of fresh fruit. During journeys, these cakes are exceedingly convenient for the making of this liquor. The leaves of the tree being large and spacious, serve the Indians for table cloths and napkins.

The plantain and banana * trees are among the most important productions of the earth. The banana tree is cultivated on a most extensive scale in Jamaica; without the fruit of which, Dr. Wright says, the island would scarcely be habitable, as no species of provision would supply their place. Even flour, or bread itself, would be less agreeable, and less able to support the laborious negro, so as to enable him to do his business, or to keep in health. Plantains also fatten horses, cattle, swine, fowls, and other domestic animals. The leaves being smooth and soft, are employed as dressings after blisters. The water from the soft trunk is astringent, and employed by some to check diarrhœas. Every other part of the tree is useful in different ways in rural economy. The leaves, independent of being used as already mentioned, for napkins and tablecloths, serve as food for hogs.

The banana tree, *Musa sapientum*, differs from the plantain in having its stalks marked with dark purple stripes and spots. The fruit is shorter, straighter and rounder; the pulp is softer and of a more luscious taste. It is never eaten green; but, when ripe, is very agreeable, either eaten raw or fried in slices as fritters, and is relished by all ranks of people in the West Indies. Both the banana and plantain were carried to the West Indies from the Canary Islands, whither, it is believed, they had been brought from Guinea, where they grow naturally.

PLETHORA.—A condition of body in which the vessels are fuller of humours than is agreeable with a natural state of health. When the general mass of fluids is increased beyond what is conducive to the perfection of health, there arises what writers term *plethora*, which may prove the source of different diseases. When, therefore, this over-fulness begins to produce langour and oppression, timely care should be taken to reduce the body to a proper standard, by abridging the food, and increasing the natural discharges, using more exercise and less sleep. But in opposite circumstances, where the fluids have been exhausted, the prevention of further waste should be attempted by the use of strengthening stomachics, nourishing diet, and abstaining from mental or bodily fatigue. — See *Stomachics*.

PLOVER.—(See *Lapwing*).

PLUM.—(*Prunus Domestica*, L.)

* *Musa sapientum*, is the systematic name of the banana tree; it is also called *Banana*, *Bananeira*, *Ficodes*, *Ficus Indica*, *Musa fructu cucumerino breviori*, *senoria*, and *pacæira*.

These also possess medicinal properties, being nourishing and attenuating. Prunes or dried plums are of peculiar service to costive habits, affording an agreeable and nutritive food; but as they are apt to produce flatulency, it would be advisable to eat them either when the stomach is empty, or for dinner, without mixing them with other aliment. Under this limitation, they are both aperient and cooling, and agree with almost every constitution; but plums eaten fresh, and not quite ripe, especially in large quantities, are very apt to occasion looseness, colics, and other maladies of the stomach and intestines. The larger sort of plum are in general more dangerous, in this respect, than the small ones, as they, particularly the green and yellow kind, are seldom allowed to attain their full degree of maturity.

There are several varieties* of plum trees. The best are esteemed a delicious dessert fruit; and the others are used in pies, tarts, conserves, and sweetmeats. A wholesome wine is also occasionally made from them, with or without other fruits and ingredients. "Plums," observes Professor Martin, "when sufficiently ripe, and taken in moderate quantity, are not unwholesome; but in an unmature state, they are more liable to produce colicky pains, diarrhœa or cholera, than any other fruit of this class. Considered medicinally they are emollient, cooling and laxative, especially the French prunes, which are peculiarly useful in costive habits. The wood of the plum is used in turnery, cabinet work, and in making musical instruments. The French prunes and damsons are the most emollient and laxative; they are often taken by themselves to gently move the belly, where there is a tendency to inflammation. Decoctions of them afford a useful basis for laxative or purgative mixtures, and the pulp in substance for electuaries. The damson is only a variety, which when perfectly ripe, affords a wholesome article for pies, tarts, &c.

POELE.—A light braise for white meats. The difference between this and the braise is, that in the former the meat, or whatever it may be, need not be so much done as in the latter.

POISONS.—The ancients considered every thing as poisonous that produced malignant symptoms, and attacked directly what we style the vital principle. Thus, miasma was with them a poison, and their remedies or antidotes were accordingly directed to the support and cherishing of the vital heat, and to increase action throughout the body. Hence also the name of Alexepharmics, and the belief of driving out poison by transpiration. On the other hand, the common idea of a poison by the moderns is, that it is a substance which, on being applied in one way or other to the human body, is capable of destroying the action of the vital functions, or of placing the solids and fluids in a situation that prevents the continuance of life. Dr. Mead's definition of poison includes every substance which, in small doses, can produce great changes on the living body. This is evidently too extensive, since it embraces many articles that are not regarded as poisons, and excludes others that are really so. Thus a small quantity of bread and water has produced great changes; whilst opium or corrosive sublimate has been taken in large quantities, without injurious effects. The definition given by Fodéré, although liable to criticism, is probably as unexceptionable as any that has yet been offered. He considers poisons to

* "Tusser enumerates ten; Pinkinson sixty; Miller, only thirty sorts. In the Luxemberg Cantaloupe are sixty eight; nearly a hundred names are to be found in the Catalogue of our nurserymen."—*Loudon*, p. 722.

be those substances which are known by physicians as capable of altering or destroying, in a majority of cases, some or all of the functions of life. (Vol. iii. p. 449).

Another interesting question is the manner in which poisons act. This has been a subject of fruitful discussion among modern physiologists, and our own country has not been wanting in ardent examiners respecting it. It is not necessary here to enlarge on the various results obtained by experimentalists, nor to enter into a discussion concerning the weight of testimony in favour of the blood-vessels, the nerves, or the lymphatics, as the medium by which poisons produce their effects. The remarkable resistance that is sometimes observed to the action of poison, deserves some allusion. Instances of this nature are so numerous, that a selection of the more striking will be sufficient to illustrate the position.

Among the Hungarians, the seeds of the *palma christi*, are often taken, to the amount of thirty-six grains, without any inconvenience; and some of the French peasantry use a decoction of *colocynth* as a common purgative. The common dose of the extract of monkshood (*aconitum Napellus*) is one or two grains, and it is deemed dangerous to use it medicinally in larger quantities; but Fodéré was consulted concerning the case of Charles IV. of Spain, who, while residing at Marseilles, was attacked with a rheumatic gout, and he recommended the medicine in question. M. Soria, the king's physician, replied, that, at a former period, it had been administered for a length of time, and to such an extent, that the patient took a drachm daily, without any good or bad effects. This monarch was now sixty-two years of age, athletic and had an excellent appetite.—*Fodéré*, vol. iii. p. 468.

The fumes of mercury, lead, and copper, are well known to be injurious to those who inhale them, yet no fact is better established than that of workmen resisting their effects for many years. "In the mines of Peru," says Humboldt, "from five to six thousand persons are employed in the amalgamation of the minerals, or the preparatory labour. A great number of these individuals pass their lives in walking barefooted over heaps of brayed metal, moistened and mixed with muriate of soda, sulphate of iron, and oxide of mercury, by the contact of the atmosphere and the solar rays. "*It is a remarkable phenomenon*," he adds, "*to see men enjoy the most perfect health.*" *Francis's Inaugural Dissert. on Mercury*, p. 27.

Again, in all the Savoyard and Swiss alps, milk is collected and kept in small copper vessels, and in Germany, preserved fruits are put into vessels of this metal, in order to give them a green colour, and all without inducing any injury. *Fodéré*, vol. iii. p. 449. The most astonishing case, however, on record, is that of the old man at Constantinople, who had been in the habit, for thirty years, of swallowing enormous quantities of corrosive sublimate, until his dose came at last to be a drachm daily. He was living in 1800.

These exceptions to general rules are best explained on the principle of idiosyncrasy, or of habit, rendering the system innoxious to their use. The quantity of opium taken daily by many of the Turks, is a striking proof of the latter. And such extraordinary instances should, above all, never influence the medical jurist, nor lead him to the conclusion, that because one person has taken a particular substance without any ill effects, it is, therefore, not a poison. The academy of Berlin was consulted, in 1752, whether copper was a poison.—(See *Copper*). They replied, that they did not consider it decidedly so, since several had taken it with impunity, either separately or mixed with food. Now, if this decision receive a general application, we may undoubtedly adduce examples of wonderful escapes from the effects of almost all noxious substances, and thus destroy the idea of poison altogether. *Fodéré*, vol. iii. p. 470.

There is another curious fact connected with this subject, which it is proper to mention. It is the different effects which some substances produce on man and other animals—being noxious to the one, and innoxious to the other, and *vice versa.* Thus sweet almonds kill dogs, foxes, and fowls—aloes are destructive to dogs and foxes, pepper to hogs, and parsley to the parrot. On the contrary, the leopard's bane *(arnica montana)* is fatal to man, while it is food for wild goats and swallows. Hogs feed on henbane *(hyosciamus)*, pheasants on stramonium, and sheep on hemlock and manchineel apple with impunity. Even arsenic is said to prove harmless to the wolf. Beckman (vol. i. p. 52), in his History of Poisons, says that four drachms of sugar given to a pigeon killed it in four hours; and five drachms, a duck in seven hours. The danger of poison, as well as the rapidity of its action, varies considerably. Animal poisons are probably the most speedily and the most certainly fatal, though they would seem to be equalled in both respects by some of the vegetable poisons, when introduced by puncture into the system. We refer particularly to the poisoned weapons of savage nations. Next, the mineral, and, lastly, the vegetable poisons. The latter, though generally slower in their operations, are often no less destructive. Poisons may be introduced into the system in various ways:—through the nose, in the form of odours; through the lungs, by inspiration; by the mouth and gullet, in the form of food; by the anus, in the form of injection; and through the skin by absorption. (*Fodéré*, vol. iii. p. 481). There are many curious accounts on record of the mode in which poisoning was supposed to have been perpetrated. Thus Zacchias says, that Pope Clement VIII. was poisoned by the smoke of a candle, and it has been supposed that dresses and jewels might be impregnated with venomous matter. Queen Elizabeth was to have been poisoned by spreading some on the pommel of the saddle. "The queen, in mounting, would transfer the ointment to her hand; with her hand she was likely to touch her mouth or nostrils, and such was the virulence of the poison, that certain death must follow."—*(Aiken's Mem. of Q. Eliz.)*. There is a minute of Council extant, in the hand writing of Cecil, which contains among other things, the following caution: "That no manner of perfume, either in apparel, or sleeves, gloves, or such like, or otherwise, that shall be appointed for your Majesty's savor, be presented by any stranger, or other person, but that the same be corrected by some other fume."—*Ibid.* vol. i. p. 299.

In noticing individual poisons, two modes of arrangement have been pursued by various writers; the one founded on the basis of natural history, and the other upon the action of these substances on the living system. The latter has of late years been most generally adopted by authors on toxicalogy, with however great variety as to their classification. Nearly all the corrosive poisons, for example, of Fodéré and Orfila, belong to the mineral kingdom, and the septic to the animal, while the acrid, narcotic, and the narcotico-acrid, divide the vegetable kingdom. The division of poisons, proposed by Fodéré, and adopted and modified after him by Orfila, may be introduced in this place. It contains six classes:—

The Corrosive, or Escharotic
Astringent
Acrid
Narcotico-acrid
Septic, and putrefying.*

A person is supposed to be poisoned, if, being in perfect health, he is attacked, after having taken some food or drink, with violent pain, cramp in the stomach, nausea, vomiting, convulsive action, and a sense of suffocation — or if he be seized under the same circumstances with vertigo, giddiness, delirium, or unusual drowsiness. All these symptoms, however, may be the effect of sudden disease, and it should be recollected by the Examiner, whether an epidemic* or sporadic† disease, resembling that of the patient, does not exist. Inquiry should also be made into his strength, mode of life, and habit of body, to ascertain whether he had previously complained of ill health. The time at which the noxious substance was taken, and the vehicle in which it was given; the taste or smell that was perceived on its administration, and the food and drink that has been lately swallowed, with many more, are all subjects which belong to the medical practitioner on being called to an examination, where poison is supposed to have been taken or given, as well as the class to which the poison, on being detected, belongs.

The following classification of poisons, will not only furnish a general theorem for the administration of antidotes, but it will suggest the different forms and modes of administration of which each particular substance is susceptible; it will shew that certain poisons may occasion death without coming into contact with anypart of the alimentary canal, and that others will produce little or no effect, however extensively they may be applied to an external surface.

Class I. By acting through the medium of the nerves, without being absorbed, and without exciting any local inflammaton.

a. By which the functions of the nervous system are destroyed.

Acrid.

Aconite, Jatropha Curcas.

Narcotico-acrid.

Alcohol, Oil of Tobacco.

Narcotic.

Essential Oil of Almonds,*
Camphor, Opium.*

[This mark * denotes that the substance against which it is placed may also act by being absorbed: and this‡, that the article has a local motion].

b. The following act by rendering the heart insensible to the stimulus of the blood.

Infusion of Tobacco,
Upas Antiar.

Class II. This class acts by entering the circulation, and acting through that medium, with different degrees of force, on the heart, brain, and alimentary canal.

Corrosive.

Arsenic, Emetic Tartar,
Muriate of Baryta.

Narcotic.

Opium,‡ Henbane,
Lettuce, Prussic Acid.

Acrid.

Hellebore, Meadow Saffron,
Savine, Squill.

Narcotico-acrid.

Deadly Nightshade,* Camphor,‡
Hemlock, Cocculus Indicus.

Class III. By a local action on the mucous membrane of the stomach, exciting a high degree of inflammation.

Acrid.

Corrosive Sublimate,	Colocynth,
	Gamboge,
Verdigris,	Euphorbium,
Muriatic Acid,	Hedge Hyssop,
Oxide of Tin,	Acids,
Sulphate of Zinc,	Alkalis,
Nitrate of Zinc,	Cantharides,
Briony,	Croton Tiglium,
Elaterium,‡	Ranunculi.

There are many diseases and symptoms that are most likely to be

* A contagious disease, attacking many people at the same time, at the same season, and in the same place.

† An epithet for such infections, and other diseases, as seize a few persons at any time or season.

mistaken for the effects of poison; and they, probably, are peculiarity of constitution *(Idiosyncrasy)*, indigestion, and sudden illness. Idiosyncrasy is an inexplicable circumstance in the animal economy; but, however extraordinary it may appear at first sight, yet it is no less true that individuals will have an antipathy to some particular article of diet; and, in some instances, the bare seeing of it, and in others the eating of it, produces the most alarming consequences. Cheese, and various other articles, have produced such effects. But the most striking cases of resemblance to the effects of poison probably occur in those who, after being long accustomed to a particular species of food, for the first time use another kind. The town of Martigues, in France, is almost exclusively inhabited by fishermen, who have lived on fish from their infancy. Fodéré, during the first year of his residence there, often prescribed meat soups to his sick, but, in every instance, their administration was followed by violent nausea and vomiting. They confessed that it was the first time they had used any aliment prepared from meat. As regards indigestion, extraordinary instances will often occur, in which symptoms the most violent and uncommon suddenly exhibit themselves. This is particularly the case with those who live in a luxurious manner, eat mushrooms and truffles (see *Mushrooms*), or shell-fish, at peculiar seasons of the year. A violent pain comes on, the stomach is attacked with spasmodic constriction, green matter is vomited, and we should certainly be led to believe that a poison had been maliciously administered, did we not know how vitiated the bile may become, and what powerful efforts are necessary in a weak stomach to throw off indigestible food. It is proper to recollect, that such symptoms may occur even in the midst of a repast, and caution is hence required, so as not to confound the cause with the effects of poison. On the subject of sudden illness, the following circumstances are recommended, as worthy of attention:—

1. The season of the year and the prevailing epidemic. Thus cholera morbus rages in the summer and autumn, and as colick and vomiting may then be said to be epidemic, we would not, of course, be so much surprised at their sudden appearance, as if they came on in winter.

2. The former habits of the patient; his mode of life and state of health should be ascertained; and we should learn, if possible, whether he has no concealed disease. Sudden death is sooner to be expected in a valetudinarian than in one who has previously enjoyed perfect health.

3. It should be noticed whether fever be present or not. It is an uncommon circumstance, that internal disease of a fatal kind, and of the nature we are now noticing, is present without more or less fever. Poisons, however, during their first operation, are not accompanied with it. *Fodéré*, vol. iv. p. 297.

We shall conclude these remarks, referring the reader to those writers on the subject who have treated it in all its bearings, by adding, that there are four generally understood kinds of poison:

1. Mineral. 3. Aerial.
2. Vegetable. 4. Animal.

Mineral poisons are to be distinguished from vegetable ones by their action. The former corrode, stimulate, and inflame, acting principally through the medium of the circulation: the latter generally stupify, by acting through the brain and nerves, leaving no marks of inflammation. None of the mineral poisons terminate life till after a most excruciating operation of at least two or three hours; whereas some of the vegetable ones destroy life in a few minutes. From the animal poisons the distinction is remarkable: under this denomination may be classed the bites of serpents, such as the viper, and various species of snakes, the virus of hydrophobia, the stings of insects, &c. The aerial poisons (see *Odours*) operate still more quickly than any of the other classes, and their action on respiration is so peculiar, that it can seldom be mistaken.—See *Culinary Poisons.*

PORK.—The ancient physicians considered pork as the best and most nutritious meat, if assisted by proper digestive powers. But they were certainly mistaken in this supposition; for, although its quality is such as requires a smaller quantity to satisfy the cravings of the stomach, yet veal and beef, taken in increased proportions, afford equal, if not more nourishment, and doubtless a more wholesome supply of animal jelly, than pork, under similar circumstances of the individual, would produce. By allowing these animals clean food and the enjoyment of pure air and exercise, their flesh might be improved in salubrity; but the farmer is not solicitous about the quality of the meat, if he can produce it in great quantities, in which he is certain to succeed, from the present unnatural mode of feeding swine.

Pork yields a copious and permanent nourishment, which does not disagree with the robust and laborious, but which, from its abundance of acrid fat, is not wholesome to persons of a weak stomach or sedentary life; as these animals live, and are fed in styes without exercise, and in an impure air. From the want of fresh water, their flesh acquires a tough and strong consistence, and is indigestible but by a healthy bile. Persons who have impure fluids, and a tendency to eruptions, as well as those who have wounds or ulcers, should refrain from the use of pork; for this food will dispose them to inflammation and gangrene: it is equally improper in a catarrhal state of the chest, in weak stomachs, coughs, and consumptions.—*Lectures on Diet and Regimen, by A. F. M. Willich, M.D.*

People of delicate habits may sometimes eat pork sparingly; but it is an erroneous notion that a dram is necessary to assist its digestion; for spirituous liquors may indeed prevent, but cannot promote its solution in the stomach. It would be more advisable not to drink for a short time after eating pork, as it is usually very fat, and this fat is more subtle and soluble than any other, and has nothing in it of the nature of tallow.

When eaten in moderation, pork is easily digested. With those whose digestive organs are weak, no other species of meat agrees in general so well, as a small quantity of this. Hence the objections made against it relate more to the quantity than the quality or substance; for if too much of it be eaten, it is apt to corrupt the fluids, and to produce acrimony. It ought therefore to be eaten sparingly and seldom, and the inclination which many have for this food should be kept within the bounds of moderation. The most proper additions to pork, are the acidulated vegetables, such as gooseberry or apple sauce; which not only gratify the palate, but correct its properties, neutralize, in a manner, its great proportion of fat, and thus operate beneficially on the alimentary canal. Upon the whole, it may be said of pork, that the occasional and sparing use of it is sufficiently salutary; but that it cannot be made a principal part of the daily diet, without producing disorders in many constitutions, and particularly in those who are of a melancholy temperament, and lead a sedentary life. The flesh of the different genus of this species is edible.—(See *Bacon*, *Butchers' Meat*, *&c*). The flesh of wild hogs, as they have more exercise than the tame, and do not live upon substances so impure and corrupted, is more palatable, easier of digestion, less tough, not so fat; and, on account of their residence in the open air, is, like all game, purer, but more liable to putrefaction. The flesh of the wild boar is dense, but it is tender, and very nourishing, and more savoury than that of the domestic hog. It is in season in the month of October. The head is esteemed the finest part. The flesh of the young animal is reckoned a great delicacy.

The flesh of the sucking pig is also considered a great delicacy, is very nourishing; but in consequence of the thick and strong juice with which it abounds, it is not very readily dissolved in the stomach, and therefore is by no means a proper food for weak and sickly persons.—See *Bacon, Hams, Smoked Meats.*

PORK, TO PICKLE.—Bone your pork and cut it in pieces of a suitable size to lie in the pan into which you intend to place them. Rub them well with saltpetre. Then take two pints of common salt, and two of bay salt, and therewith rub the pieces well. Put a layer of common salt, lay them one upon another as close as you can, and fill up the hollow places with salt. As the salt melts on the top, strew on more; lay a coarse cloth over the vessel, a board over that, and a weight again over that, to keep it down. Thus managed and close covered, it will keep the whole year.—See *Drysalting.*

PORRIDGE (*vulgo*, BURGOO).—Oatmeal and water reduced to a certain consistence, and eaten either with milk, butter, small ale, or treacle.

This humble dish of our northern brethren, forms no contemptible article of food. It possesses the grand qualities of salubrity, pleasantness, and cheapness. It, in fact, is a sort of oatmeal hasty pudding without milk, much used by those patterns of combined industry, frugality, and temperance, the Scottish peasantry; and this, among other examples of the economical Scotch, is well worthy of being occasionally adopted by all who have large families and small incomes. It is made in the following manner:—to a quart of oatmeal add gradually two quarts of water so that the whole may smoothly mix: then stirring it continually over the fire, boil it together; after which take it up and stir a little salt and butter—with or without salt. This quantity will serve five or six persons for a moderate meal.—*Oddy's Family Receipt Book*, p. 204.

Burgoo is, we apprehend, the sea term, though *porridge* is the most common acceptation on shore—the latter known, if there be any differance in the composition, is made just the reverse, by adding the oatmeal gradually when boiling, keeping it up to the boiling point until it reach a proper consistence.

PORTER.—A kind of malt liquor that differs from ale and pale beer in its being made with high dried malt. According to Dr. Ash, in his Dictionary, it obtained the appellation of porter, from being much drank by porters in the city of London. This happened about the year 1730, from the following circumstance. The malt liquors in general use prior to that period were all beer and twopenny; and is was customary to call for a pint or tankard of half and half—that is, half of ale and half of beer, as is the case at the present day—half of ale and half of twopenny; or half of beer and half of twopenny. In the course of time it also became the practice to ask for a pint or tankard of *three-threads*, meaning a third of ale, beer, and twopenny — and thus the publican was obliged to go to three casks for a single pint of liquor. To avoid this trouble and waste, a brewer of the name of Harwood, conceived the idea of making a liquor which should partake of the united flavour of ale, beer, and twopenny. He did so, and succeeded, calling it entire or entire-butt beer, meaning that it was drawn entirely from one cask or butt; and being hearty and nourishing (particularly at the time it was first retailed, at the Blue Last, in the Curtain-road) it was very suitable for *porters*, and other working people. Hence it obtaind the name of porter.—*Picture of London*, 1804.

Mr. Pennant, speaking of porter (genuine porter it may be presumed) calls it a wholesome liquor, which he says enables the London porter drinkers to undergo tasks that the gin drinkers would sink under. It is, however, a mistaken notion, as Mr. Colquhoun justly observes, that a large quantity of malt liquor supports labourers of every description. After a certain moderate portion is taken, it not only enervates the body, but stupifies the senses. A coalheaver who drinks from twelve to sixteen pots of porter in the course of the day, would receive more real nourishment, and perform his labour with more ease and a greater portion of athletic strength, if only one-third of the quantity were consumed. He would also enjoy much better health, and be fitter for his labour the following day.

The sight of a great London brewhouse exhibits a magnificence unspeakable. The breweries form an important national concern, as the duty on malt has produced not less than 1,500,000*l.* sterling, towards the support of the state; and the exportation of porter forms a considerable article of commerce. Of capacious beer casks we have the following account. A few years before the death of Mr. Thrale, the celebrated brewer and biographer of Dr. Johnson, which happened in 1731, an emulation arose among the brewers to exceed each other in the size of their casks, for keeping beer to a certain age — probably, says Sir John Hawkins, taking the hint from the tun at Heidelberg. The late Mr. Whitbread, it is conjectured, had constructed one that would hold some thousand barrels, the thought of which caused some uneasiness to Mr. Thrale, and made him repeat from Plutarch, a saying of Themistocles, "The trophies of Miltiades hinder my sleeping." Yet the late Mr. Boswell relates, that Dr. Johnson once mentioned that his friend Thrale had four casks so large that each of them held a thousand hogsheads. But Mr. Meux, of Liquorpond-street, can, according to Pennant (*Account of London*, p. 322, *edit.* 1793) shew twenty-four vessels, containing in all 35,000 barrels; one of which alone holds 4,500 barrels; and in the year 1790, this enterprising brewer built another, which cost him 3000*l.*, and contains nearly 12,000 barrels — valued at about 20,000*l.* A dinner was given to 200 people at the bottom, and 200 more joined the company to drink success to this unrivalled vat.—See *Malt Liquors*.

PORT WINE (*vinum Portugallicum*).—This wine receives its name from being made in the districts adjacent to Oporto, or Porto, a rich, handsome, and considerable town in Portugal; and on this account, all red wines that come from Spain, or Portugal, are usually called port wines. The Portuguese wines, when old and genuine, are esteemed to be very friendly to the human constitution, and safe to drink; but it is generally supposed, that not half the quantity consumed under the name of port wines, in the British dominions only, comes from Oporto. The merchants in this city, have, however, very spacious wine vaults, capable of containing many thousand pipes; and it is said that 20,000 are annually exported from thence.—(See *Wine*). Negus made of port wine is esteemed one of the most innocent and wholesome species of drink, especially if Seville oranges be added to it, instead of lemons; being drank moderately it possesses several virtues in strengthening the stomach;

but, on account of the volatile and heating oil in the orange peel, negus, if taken in great quantities, is more stimulant and drying than pure wine. Persons troubled with the piles, and diseases of the breast, should not indulge themselves in this, nor punch.—See *Ardent Spirits*.

POTAGE. — Another culinary term for soup.

POTASS, PRUSSIATE OF.— A test for the sulphate of iron. The prussiate of potass is a very delicate test, and will detect mineral substances, such as iron or copper, in any fluids, in minute quantities, with some little chemical preliminaries to adjust it for accurate results; such as depriving the suspected fluid of its colouring matter, that the action of the test may be less equivocal; this is done by mixing in the suspected fluid, as in beer, some animal charcoal (ivory black) and afterwards filtering it through blotting paper. The above test becomes then more apparent. If iron be present, it turns the iron of a bluish colour. Prussiate of potass is besides a test of copper — corrosive sublimate— muriate of tin—nitrate of bismuth, silver and zinc; although it has no effect on muriate of gold, which latter is also a test for iron.—(See *Gold, Muriate of*). The triple prussiate of potass and iron in solution, if copper be present, gives a brown precipitate. When very diluted, it will only produce a red colour in the mixture, without any turbidness; but at the end of about twenty minutes, the brown precipitate will fall. This is one of the most minute tests of the presence of copper.

The ferrocyanate of potass has long been used as a test for copper and iron in solution, and it is hardly possible to imagine any thing more sensible than its indications. M. Brandenburgh, however, recommends as superior to it, the ferrocyanate of ammonia (prussiate of ammonia and iron). It is easily prepared by pouring ammonia on to Prussian blue in a phial, which must be closely stopped. About six of the former to one of the latter may be used at first; and if, in the course of three or four days, the whole of the sediment has become brown, more of the Prussian blue is to be added, until it cease to change colour. The solution is then filtered, that which remains adhering to the residuum being passed through by washing, and is then preserved for use. It should be of a fine yellow colour. —*Journal of Science*.

POTATOES.—The potatoe is a perennial plant, well known for the tubers produced by its roots. The stem rises generally from two to three feet in height, with long and weak branches, furnished with leaves interruptedly pinnate. The flowers are white, or tinged with purple. The fruit is a berry of the size of a plum, green at first, but black when ripe, and containing many small, flat, roundish, white seeds. It is supposed to be a native of South America, but Humboldt is very doubtful if that can be proved: he admits, however, that it is naturalized there in some situations.*

* Sir Joseph Banks (*Hort. Trans.* i, 8), considers that the potatoe was first brought into Europe from the mountainous parts of South America, in the neighbourhood of Quito, where they were called *papas*, to Spain, in the early part of the sixteenth century. From Spain, where they were called *battatas*, they appear to have found their way first to Italy, where they were received with the same name with the truffle, *taratoufli*. The potatoe was received by Clusius, in Vienna, in 1598, from the governor of Mons, in Hainault, who had procured it the year before from one of the attendants of the Pope's legate, under the name of *taratoufli*, and learned from him that it was then in use in Italy. In Germany it received the name of *kartoffel*, and spread rapidly even in Clusius' time. To England the potatoe found its way by a different route, being

Potatoes are the most common esculent root now in use among us; though little more than a century ago they were confined to the gardens of the curious, and presented as a rarity. They form the principal food of the common people in some parts of Ireland, and are much used by the poorer classes of Scotland, and other countries. There are two varieties of the potatoe in general use; one with a white, and the other with a red root. And besides these, there is a new kind, first brought from America, which that "Patriot of every clime," the late Mr. Howard, cultivated in 1765, at Cardington, near Bedford. Many of these potatoes weigh four or five pounds each; and hogs and cattle are found to prefer them to the common sort. They are, moreover, deemed more nutritive than others; containing more farina or flour. As an esculent plant, they appear also worthy of cultivation; being, it is said, when well boiled, equal, and when roasted preferable, to the common sort. That species known by the name of waxy potatoe, should be shunned by the dyspeptic, for it is so indigestible as to pass through the intestines in an unaltered state. The same objection applies to the young or new potatoe. The mealy kind more readily yields to the power of the stomach, and affords a healthy nutriment; in some respects it supplies the place of bread, and should be eaten with freedom whenever our food is concentrated. To the dyspeptic this vegetable has been found to be injurious; and, if ever allowed to such patients, it is worthy of remark, that in the roasted state they are more wholesome than in any other form of cookery. The process of *mashing* certainly does not contribute to their digestibility; since by such a process they escape being so intimately blended with the saliva; and when they are impregnated with the fat of roast beef, they ought to be scrupulously avoided by weak stomachs. If boiled, care should be taken that they be not over-done, as in this case they are deprived of their nutritious properties. The proportion of starch contained in the potatoe varies according to the species, but it is frequently as high as eighteen per cent. Analysis also discovers a considerable portion of sugar, water, and a peculiar vegetable juice, even in the driest sorts. The waxy kind, which are those, we believe, only relished in London, seem to contain less farinaceous matter than the Irish or Scots potatoes. It is not to be concealed however, that the potatoe, as it belongs to the family of the nightshades, must have some of the qualities of a narcotic poison; and we accordingly find that Dr. Latham has tried an extract, prepared from the leaves and flowers by Mr. Hume of Long Acre, which, in the small quantity of two or three grains, acts as an anodyne, and a double dose produces torpor and giddiness.—*Medical Transactions*, vi. 92.

Like cassava, however, the potatoe, if it possess a narcotic juice in a raw state, most certainly loses it by the process of cooking, and becomes one of the most easily digested and nourishing articles of vegetable aliment, which, like other vegetables, is not apt to produce viscidity and flatulence, though, when used for the whole diet, as it often is among the

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brought from Virginia by the colonists sent out by Sir Walter Raleigh in 1584, and who returned in July, 1586, and "probably," according to Sir Joseph Banks, "brought with them the potatoe." Thomas Herriott, in a report on the country, published in Dr. Bry's Collection of Voyages (vol. i, p. 17), describes a plant called *openawk*, with "roots as large as a walnut, and others much larger; they grow in damp soil, many hanging together, as if fixed on ropes; they are good food, either boiled or roasted."—*Loudon's Cyclopædia of Gardening*, p. 623.

poor, it is apt to weaken and relax the bowels. The celebrated chemist Parmentier, for an experiment, lived exclusively on potatoes for a month, without the least effect on his health. The ease and rapidity with which potatoes are digested, is proved by the remark of labouring people, who sooner feel a renewal of their appetite after them than after any other kind of food. They are most wholesome when either plainly boiled, baked in an oven with their skins on, or roasted in an iron pot. By all these methods the coarse rank juice is either extracted or ameliorated, and the farinaceous part rendered mealy and palatable. By most other methods of dressing, their nutritious and digestible properties are more or less injured. Mashed or beat potatoes, for instance, form a tough paste, which contains a great proportion of air beat into the mass, while it is preparing, and confined by the tenacity of the potatoes. During digestion the air is disengaged, and occasions an unpleasant flatulence. Cooked under a roast, or roasted or fried with butter or dripping, potatoes have their farinaceous qualities much injured, and the brown crust usually formed on them, however palatable and savoury, is very indigestible, in consequence of partially charring, and of the empyreumatic oil which it contains. This will often derange the most vigorous stomach, and ought never to be touched by the weak. Soup made with potatoes is not so flatulent as pea-soup, nor yet so indigestible. New potatoes, though an agreeable dish, contain very little of the nutritive farina of the mature roots, being chiefly composed of mucilaginous matter, water, and sugar.

Neither potatoes nor any other vegetable dish, with the exception of pea-soup, ought ever to be warmed-up after standing over from a preceding meal, as they are then always more or less unwholesome. When mixed with flour (see *Bread*), potatoes are much used to increase the quantity of bread at a cheap rate, and it has now become a common practice with bakers. In Scotland they are kneaded with oatmeal or barley flour, and cakes or bannocks made from the mixture.

The fruit of the potatoe contains a large proportion of acid, which is said by Mr. Bainbridge to be tartaric, with a small proportion of malic acid. M. Vauquelin, in his experiments on the quantity of alkali to be obtained from the leaves and stalks of the potatoe, cautions agriculturists against a too hasty adoption of the culture of that plant, for the purpose of obtaining the potash. The quantity of alkali varies extremely with the nature of the soil, being, when carbonated, from one pound and three quarters to five ounces, for every hundred pounds of the green stalks, &c.; and it varies also in proportion to the other salts contained in the ashes of the vegetable, sometimes scarcely having a place. The quantity of potash yielded by the potatoes is in proportion to the quantity of decomposable salts, as acetates, oxalates, tartrates, malates, nitrates, &c. which they may contain.

From experiments made in France at various places, it appears that the fruit or apples of the potatoe yield, by proper treatment, as much alcohol as an equal quantity of grapes. The apples are to be bruised and fermented with about an eighteenth or twentieth part their weight of some ferment, and then to be distilled. A chemist of Copenhagen is also said to have discovered a brilliant matter for dyeing, in potatoe tops. The mode of obtaining it is, by cutting the top when in flower, and bruising and pressing it to extract the juice. Linen or woollen, soaked in this liquid during forty-eight hours, takes a fine solid and permanent yellow dye. If the cloth be afterwards plunged in a blue dye, it then acquires a beautiful permanent green colour. M. Pesquier, of Geneva, has ascertained, by some experiments, the presence of sugar in the potatoe, accompanied by a portion of gum. Impressed with the result of his experiments (see *Bibliotheque Universelle)*, M. Pesquier is induced to believe that the value of the potatoe, as an object of culture, will be increased by a knowledge of the above fact; and also to think that it is decisive, but opposing evidence, to the opinion, that alcohol could be formed by the substances not containing sugar.

POTTING.—A mode of preserving animal substances, the process of which consists in reducing cooked animal substances to a pulp, by beating the meat in a mortar, and incorporating the mass with a portion of salt and spices. The pulp is then put into a jar, and covered with a thick coat of melted butter or lard, to exclude the air. The surface is further protected with a bladder skin tied over the mouth of the jar. The muscular part of meat is best suited for potting, and the quantity of salt and spices employed in the process ought to be in sufficient abundance.

Potted Beef, Game, or Poultry.—To three pounds of lean meat, half a pound of common salt, and half an ounce of saltpetre are used; with these ingredients the meat is salted, and left for twelve hours. The meat is then divided into pound pieces, and put into an earthen pan that will just hold it; pour in half a pint of water, cover it close with paste, and set in a very slow oven for four hours. When taken from the oven, pour the gravy from it into a basin; shred the meat fine, moisten it with gravy poured from the meat, and pound it thoroughly in a marble mortar with fresh butter, till the paste becomes as fine as possible; season it with black pepper and allspice, or cloves pounded, or grated nutmeg; put it in pots, press it down very close; put a weight upon it, and let it stand all night. The following day, when it is quite cold, cover it a quarter of an inch thick with clarified butter, and tie it over with paper.—See *Lobster, to Pot, &c.*

Ham, veal, poultry, game, &c., may all be potted in a similar manner.

POULTRY.—Poultry furnishes us with the most valuable aliment, as it has excellent and well-digested fluids, from its more frequent exercise and constant residence in the open and pure air. Some animals, when young, have tough and spongy flesh, which is mollified and improved by age, and can be eaten only after a certain time, such as eels and carp. Others are hard when young, and must be used early, because that hardness increases with their age; as the haddock and many other species of fish. The flesh of old animals, that have less muscular parts than the young ones of the same species, is indigestible; and we may lay it down as a general rule, that the more the flesh of an animal is disposed to putrefaction, the more it is unwholesome.

Some parts of fowls are less wholesome than others. The wings of those whose principal exercise is flying, and the legs of those that generally run, are the driest parts of their bodies: hence, the breast is, in all, the softest and most nutritive part. Young poultry is preferable to that of some years old, which has very tough muscles, and is heavier to the stomach. The capon is one of the most delicate dishes; if eaten when young, he yields a strong and good chyle; his flesh is not too heating, nor disposed to putrescency, and the fat itself is easily digested. Turkeys, as well as guinea or India fowls, yield a strong aliment, but are more difficult of digestion than the capon, particularly the legs, wings, and fat. These birds when roasted, are usually filled with some kind of heavy pudding, which is a favourite morsel with many, but requires the strongest digestive powers. The old prejudices that the flesh of capons is productive of the gout, and that of sparrows bringing on epilepsy, are too absurd to require refutation.

POULTRY, METHOD OF FATTENING. — The manner in which birds are fed, influences at once their fatness and their flavour. They seldom get very fat in a state of nature, any more than when domesticated, if allowed to go at large. The art of fattening poultry, consists in confining them, and supplying them with abundance of healthy food. Aquatic fowls, particularly ducks and geese ~~grouse,~~ should be prevented from going into the water, not only because they never get fat when allowed to do so, but because they acquire a rancid fishy taste from the food they usually pick up in such places. Fattening of fowls for the London market, constitutes an important as well as a considerable branch of rural economy. They are cooped up in a place excluded from the light, and crammed with paste made of barley meal, mutton suet, and some treacle and coarse sugar, mixed with milk, and are found to be completely up in a fortnight. If kept longer, the fever that is brought on by this unnatural state of repletion, renders them red and unsaleable, and frequently kills them.* But the flesh of fowls brought to this state of artificial obesity, is never so well flavoured, and probably not so salubrious as those of the same species fattened in a more natural way; the great secret in having fine pullets is cleanliness and high keeping with the best corn.

The process adopted in different parts of France to enlarge the liver of a goose, is described as follows, by Sonnini.† "The object of the third method is to enlarge the liver. Nobody is ignorant of the endeavours of sensuality, to cause the whole vital forces to be determined towards this part of the animal, by giving it a kind of hepatic cachexy. In Alsace, the individual takes a lean goose, which he shuts up in a small box of wire, so tight that it cannot turn it. The bottom is furnished with a wide grating of rods, for the passages of the dung. In the fore part there is a hole, for the head, and below it a small trough is always kept full of water, in which some pieces of wood charcoal are left to steep. A bushel of maize is sufficient to feed it during a month, at the end of which time the goose is sufficiently fattened. A thirtieth part is soaked in water, each night, and crammed down its throat, night and morning. The rest of the time it drinks and guzzles in the water. Towards the twenty-second day, they mix with the maize some poppy oil, and at the end of the month, it is known by a lump of fat under each wing, or rather by the difficulty of breathing, that it is time to kill, or it will die of fat. The liver is found then weighing from one to two pounds, and besides, the animal is excellent for the table, and furnishes during its roasting from three to five pounds of fat, which is used in the cookery of vegetables — of six geese, there are commonly only four (and these are the youngest) which answer the expectation of the fattener. They are kept in a cellar, or place with little light; and the Roman epicures, who prized their livers, had already observed, that darkness was favourable to this kind of education, no doubt, because it prevents all distractions, and directs the whole powers towards the digestive organs. The want of motion and the difficulty

* Agricultural Report of Berkshire, by William Mavor, L.L.D. 8vo. Lond. 1818.

† A celebrated naturalist and traveller, a Frenchman by birth, though of Italian parents.

of respiration, may also be taken into account; the first by diminishing the waste of the system, and both by retarding the circulation in the vena portarum;* by which the blood ought to become hydrogenated, in proportion as its carbon unites itself to the oxygen, which that liquid absorbs; this favours the formation of the oily juice, which, after having filled the cellular system of the body, enters into the biliary system and substance of the liver, and gives it that fatness and size which is so delightful to the palates of every veritable gourmand. The liver only thus becomes consecutively enlarged, and the difficulty of respiration does not appear till the end, when its size prevents the return of the diaphragm. The leanness of geese subjected to this treatment, is often mentioned, but it can only occur in those whose eyes are extinguished and feet nailed down to a board, as the consequence of this barbarous treatment. Among a hundred fatteners, there are scarcely two who adopt this practice, and even these do not put out their eyes till a day or two before they are killed. And therefore the geese of Alsace, which are free from these cruel operations, acquire a prodigious fatness, the effect of a general atony of the absorbents, caused by want of exercise, combined with succulent food, crammed down their throats, in an under oxygenated atmosphere.

POULTRY, AND GAME, *for each Month in the Year.*

JANUARY.

Capons,	Pigeons, tame,
Chickens,	Pullets,
Fowls,	Rabbits,
Hares,	Snipes,
Partridges,	Turkeys,
Pheasants,	Woodcocks.

FEBRUARY.

Capons,	Pigeons,
Chickens,	Pullets,
Fowls,	Rabbits, tame,
Hares,	Snipes,
Partridges,	Turkeys,
Pheasants,	Woodcocks.

MARCH.

Capons,	Pigeons,
Chickens,	Pullets,
Ducklings,	Rabbits,
Fowls,	Turkeys.

APRIL.

Chickens,	Pigeons,
Ducklings,	Pullets,
Fowls,	Rabbits.
Leverets,	

MAY.

Chickens,	Leverets,
Ducklings,	Pullets,
Fowls,	Rabbits,
Green Geese,	Turkey Poults.

JUNE.

Chickens,	Plovers,
Ducklings,	Pullets,
Fowls,	Rabbits,
Geese, Green,	Turkey Poults,
Leverets,	Wheatears.

JULY.

Chickens,	Pheasants,
Ducks,	Pigeons,
Ducklings,	Poults (turkey)
Fowls,	Plovers,
Geese, Green,	Pullets,
Leverets,	Rabbits,
Partridges (young)	Wheatears.

AUGUST.

Chickens,	Pigeons,
Ducklings,	Plovers,
Fowls,	Pullets,
Green geese,	Rabbits,
Grouse,	Turkey Poults,
Leverets,	Wheatears,
Pheasants,	Wild Ducks.

SEPTEMBER.

Chickens,	Pheasants,
Ducks,	Pigeons,
Fowls,	Pullets,
Geese,	Rabbits,
Hares,	Teal,
Larks,	Turkeys.
Partridges,	

* The great vein situated at the entrance of the liver, which receives the food from the abdominal viscera, and carries it into the substance of the liver.

OCTOBER.

Chickens,	Pullets,
Dotterels,	Rabbits,
Fowls,	Snipes,
Geese,	Teal,
Hares,	Turkeys,
Larks,	Widgeons,
Partridges,	Wild Ducks,
Pheasants,	Woodcocks.
Pigeons,	

NOVEMBER.

Chickens,	Pullets,
Dotterels,	Rabbits,
Fowls,	Snipes,
Geese,	Teals,
Hares,	Turkeys,
Larks,	Widgeons,
Partridges,	Wild Ducks,
Pheasants,	Woodcocks.
Pigeons,	

DECEMBER.

Capons,	Pigeons,
Chickens,	Pullets,
Dotterels,	Rabbits,
Fowls,	Snipes,
Geese,	Teal,
Hares,	Turkeys,
Larks,	Widgeons,
Partridges,	Wild Ducks,
Pheasants,	Woodcocks.

POULTRY AND WILD FOWL, &c.—DIRECTIONS FOR THE PROPER CHOICE OF.

1. *Bustards, to choose.*—The same rule laid down for the choice of a turkey will hold good with respect to this curious bird.

2. *Cocks and Hens, to choose.*—The spurs of a young cock are short, but the same precaution will be as necessary here in that point, as just observed on the choice of turkeys. Their vents will be open if they are stale, but close and hard if fresh. Hens are always best when full of eggs, and just before they begin to lay. The combs and legs of an old hen are rough, but smooth when young. The comb of a good capon is very pale, its breast is peculiarly fat, and it has a thick belly and a large rump.

3. *Ducks, to choose.*—The legs of a fresh killed duck are limber, and if it be fat its belly will be hard and thick; the feet of a stale duck are dry and stiff; the feet of a tame duck are inclining to a dusty yellow, and are thick; the feet of a wild duck are smaller than those of a tame one, and are of a reddish colour. Ducks must be picked dry, but ducklings scalded.

4. *Geese, to choose.*—A yellow bill, and feet with but few hairs on them, are the marks of a young goose, but these are red when old. Green geese are in season from May till June, till they are three months old. A stubble goose will be good till it be five or six months old, and should be picked dry, but green geese should be picked scalded. The same rules will hold good for wild geese, with respect to their being young or old.

5. *Hares, to choose.*—Both the age and freshness are to be considered in the selection of a hare. When old the claws are blunt and rugged, the ears dry and tough, and the cleft wide and large; but if the claws be smooth and sharp, the ears tear easily, the cleft in the lip be not much spread, it is young. The body will be stiff, and the flesh pale, if newly killed; but if the flesh be turning black, and the body limber, it is stale, though hares are not always considered as the worse for being kept till they turn a little. The principal distinction between a hare and a leveret is, that the leveret should have a knob, or small bone, near the foot on its fore leg, which a hare has not.—See *Hare.*

6. *Partridges, to choose.*—Autumn is the season for partridges, when, if young (the only ones fit for use), the legs will be yellowish, and the bill of a dark colour. If they are fresh the vent will be firm; but if stale it will look greenish, and the skin will peel when rubbed with the finger. If they be old the bill will be white and the legs blue; look at the extremity of the wing, if it is sharp pointed and whitish, the bird

is still tender, and invariably on the contrary if it is old.

7. *Pheasants, to choose.*—These birds are of a very fine flavour, and are of the English cock and hen kind. The cock has spurs, the hen none: but she is most valued when with egg. The spurs of a young cock pheasant are short and blunt, or round; but if he be old they are long and sharp. If the vent of the hen be open and green, she is stale; and when rubbed with the finger the skin will peel; if she be with egg, the vent will be soft.

8. *Pigeons, to choose.*—These birds are full and flat at the vent, and limber footed when new; but if the toes are harsh, the vent loose and open, and green, they are stale; if they be old their legs will be large and red. The tame pigeon is preferable to the wild, and should be large in the body, fat, and tender; but the wild pigeon is not so fat. Wood pigeons are larger than wild pigeons, but in other respects like them. The same rules will hold good in the choice of the plover, fieldfare, thrush, lark, blackbird, &c.

9. *Rabbits, to choose*—The claws of an old rabbit are very rough and long, and grey hairs are intermingled with the wool, but the wool and claws are smooth when young. If it be stale it will be limber, and the flesh will look bluish, with a kind of slime upon it; but it will be stiff, and the flesh white and dry, if fresh.—See *Rabbit*.

10. *Turkeys, to choose.* If a cock turkey be young it will have a smooth black leg, with a short spur, the eyes will be full and bright, and the feet limber and moist; but you must carefully observe, that the spurs are not cut or scraped to deceive you. When a turkey is stale the feet are dry, and the eyes shrunk. The same rules will determine whether a hen turkey be fresh or stale, young or old, with this difference, that if she be old her legs will be rough and red; if with egg the vent will be soft and open, but if she have no eggs the vent will be hard. To judge of a turkey, that is, when it ought to be cooked, we are recommended to leave a few feathers unplucked to assist in determining their condition. No man who understands good living will say, on such a day will I eat that turkey, but let him hang it up by four of the large tail feathers, and when, on paying his morning visit to the larder, he finds it lying on a cloth prepared to receive it when it falls, that day let it be cooked.

11. *Woodcocks, to choose.*—A woodcock is a bird of passage, and is found with us only in the winter. They are best about a fortnight or three weeks after their appearance, when they have rested, after their long passage over the ocean. If they be fat they will be firm and thick, which is a proof of their good condition. Their vent will be also thick and hard, and a vein of fat will run by the side of the breast; but a lean one will feel thin in the vent. If it be newly killed its feet will be limber, and the head and throat clean; the contrary if stale.

POULTRY, to Carve.—See also *Carving*.

1. *To cut up a Turkey.*—To cut up a turkey, *secundum artem*, raise the leg and open the joint, but be sure not to take off the leg. Lace down both sides of the breast, and open the pinion of the breast, but do not take it off. Raise the "merry-thought," between the breast bone and the top, raise the brawn and turn it inwards on both sides, but be careful not to cut it off, nor break it. Divide the wing pinions from the joint next the body, and stick each pinion where the brawn was turned out; cut off the sharp end of the pinion, and the middle piece will exactly fit the place. In the same manner you may *souse* a capon, *cut up* a bustard, and *allay* a pheasant.

2. *To wing Partridges or Quails.*—To *wing* either of these birds nothing more is requisite than to raise the legs and wings. Use salt and powdered ginger for sauce.

3. *To allay Pheasants or Teal.* — To *allay* either of these observe the directions given in the preceding, but use salt only for sauce.

4. *To lift a Swan.*—Slit it quite down the middle of the breast clean through the back, from the neck to the rump. Divide it into two parts, neither breaking nor tearing the flesh. Then lay the halves in a charger with the slit downwards; throw salt upon it, and set it on the table.

5. *To display a Crane.*—After its legs are unfolded cut off the wings, take them up, and sauce them with powdered ginger, vinegar, salt, and mustard.

6. *To dismember a Heron.*—Cut off the legs, lace the breast bone down each side, and open the breast pinion without cutting it off; raise the merry-thought between the breast bone and the top of it, and then raise the brawn, turning it outwards on both sides, but do not break it nor cut it off. Sever the wing pinion from the joint nearest the body, sticking the pinions in the place where the brawn was. Remember to cut off the sharp end of the pinion, and supply the place by the middle piece. A capon may be *soused*, a pheasant *allayed*, or a bittern *disjointed*, in the same manner, using no other sauce than salt.

7. *To thigh a Woodcock.* — Raise the legs and wings the same way in which you do a fowl, only open the head for the brains. In this manner you *untack* curlews, *mince* plovers or snipes, using no sauce but salt.

8. *To rear a Goose.* — Cut off both legs in the manner of a shoulder of lamb, and take off the belly piece close to the extremity of the breast; lace the goose down both sides of the breast, about half an inch from the sharp bone, divide the pinions and the flesh, first with your knife, which must be raised from the bone, and taken off with the pinion from the body. Then cut off the merry thought, and cut another slice from the breast bone quite through; lastly, turn up the carcass, cutting it asunder, the back above the loin bones.

9. *To unbrace Mallards and Ducks.*—First raise the pinions and legs, but do not cut them off; then raise the merry-thoughts, from the breast, and lace it down both sides with your knife.

10. *To carve Fowls.*—Roasted or boiled, a fowl is cut up in the same manner as a pheasant, with the exception that the pheasant has the head tucked up under the wing, whereas the head of the fowl is cut off before it is dressed. In a boiled fowl the legs are bent inwards, and tucked into the belly. In order to cut up a fowl, the best way is to take it upon your plate. The legs, wings, and merry-thought, being removed, take off the neck bones. All the parts being thus separated from the carcass, divide the breast bone from the back by cutting through the tender ribs on each side from the neck quite down to the tail, lay the back then upwards on your plate, fix your fork under the rump, and laying the edge of your knife on the back, press it down, then lift up the lower part of the back, and it will readily divide with the help of your knife. In the next place lay the lower part of the back upwards on your plate, and cut off the side bones, or sidesmen as they are generally called, when your fowl will be completely cut up. The epicurean or gourmand morsels are the wings, breast, and merry-thought, and next to them the neck bones and sidesmen. The legs are generally considered as coarse, though there was a time when they were esteemed as the best parts of the fowl. The legs of boiled fowls are more tender than those that are roasted; but every

part of a chicken is good and juicy. As the thigh bones of a chicken are very tender, and easily broken with the teeth, the gristle and marrow render them very delicate.

11. *To unlace a Rabbit.*—Turn the back downwards, and divide the apron from the belly, this done slip your knife between the kidneys, detaching the flesh on each side, then turn the belly, cut the back crossways between the wings, and draw your knife down both sides of the back bone, dividing the side and legs from the back. Observe not to pull the leg too violently from the bone when you open the side, but with great exactness lay open the sides from scut to shoulder, and then put the legs together.

12. *To cut up a Hare.*—There are too ways of cutting up a hare, but the best and readiest is to put the point of the carving knife in under the shoulder, and cut through all the way down to the rump, on one side of the back bone; this done, cut in the same manner on the other side, at an equal distance from the back bone; by this means the body will be nearly divided into three. You may now cut the back, through the spine or back bone, into several small pieces, more or less, as occasion shall require. The back is much the tenderest part, fullest of gravy, and esteemed the most delicate. When you help to a part of the back, you must also give a spoonful of pudding with it, which you may now easily come at. Separate the legs from the back bone, they are easily cut from the belly. The flesh of the legs is the next in estimation; the shoulders must be then taken off, which are generally bloody, on which account some people prefer them to the legs. The whole leg of a large hare would be too much to give to one person, it will be therefore proper to divide it, and the best part of the leg is that which comes off nearest from the body. Some people are fond of the head, brains, and bloody part of the neck; but before you begin to dissect the head, cut off the ears at the roots, as many are fond of them when they are roasted crisp. The head must then be divided in this manner: put it on a clean pewter plate, so as to have it under your hand, and turning the nose towards you, steady it with your fork, so that it may not slip from under your knife, you must introduce the point of the knife into the skull between the ears, and by forcing it down as soon as it has found its way, the head may easily be divided into two by forcing the knife with some degree of strength quite down through the nose.

Observation.— This method, however, is to be done only when the hare is a young one, for if it be old, the best method is to put the knife pretty close to the back bone, and cut off the leg; but as the hip bone will be in your way, turn the back of the hare towards you, and you must endeavour to hit the joint between the hip and the thigh bone; when you have separated one, cut off the other, then cut a long narrow slice or two on each side of the back bone, then divide the back bone into two, three, or more parts, passing your knife between the several joints of the back.

PRUNUS.—The name of a genus of plants in the Linnæan system. Class, *Isocandria;* order, *Monogynia.* The name of the tree which bears the plum or prune. Of these are—See *Plum.*

PRUNUS ARMENIACA. — Apricots, which are the fruit of this plant, are, when ripe, easily digested, and are considered as a pleasant and nutritious delicacy.

PRUNUS AVIUM.—The systematic name of the black cherry tree. The flavour of the ripe fruit is esteemed by many; and if not taken in too large quantities is extremely salutary. A gum exudes from this tree, the properties of which are similar to the Gum Arabic.

PRUNUS CERASUS.—The systematic name of the red cherry tree. The fruit of this tree possesses a pleasant acidulated sweet flavour, and is proper in fevers, scurvy, and bilious obstructions. Red cherries are mostly eaten as a luxury, and are very wholesome, except to those whose bowels are remarkably irritable.—See *Cherries*.

PRUNUS DOMESTICA.—The systematic name of the plum or damson tree.—See *Plums*.

PRUNUS—LAURO-CERASUS.—The systematic name of the Poison Laurel: called also common Cherry Laurel, Bay Laurel, and the Alexandrian Laurel. The leaves of the lauro-cerasus have a bitter, styptic taste, accompanied with a flavour resembling that of bitter almonds, or other kernels of the drupaceous fruits; the flowers also manifest a similar flavour. The powdered leaves applied to the nostrils, excite sneezing, though not so strongly as tobacco. The kernel-like flavour which these leaves impart being generally esteemed grateful, has sometimes caused them to be employed for culinary purposes, and especially in custards, puddings, blanc mange, &c. and as the proportion of this sapia matter of the leaf to the quantity of the milk is commonly inconsiderable, bad effects have seldom ensued. But as the poisonous quality of this laurel is now indubitably proved, and known to be the Prussic acid, which can be obtained in a separate form, the public are cautioned against its internal use.—See *Cherry Laurel*.

PRUNUS PADUS. — The systematic name of the wild-cluster, or bird cherry tree. The bark and berries of this shrub are used medicinally. The former when taken from the tree has a fragrant and bitter sub-astringent taste, somewhat similar to that of bitter almonds. Made into a decoction it cures intermittents, &c.

PRUNUS SPINOSA.—The systematic name of the sloe tree. (*Prunus Sylvestris).* The juice of the sloe is sometimes used in gargles to tumifactions of the tonsils and uvula, and, from its astringent taste, was formerly much used in hemorrhage, but is now principally employed in the manufacture of home-made port wine.

PUDDINGS.—Puddings are of two kinds: the first consists of a farinaceous dough, containing a portion of butter or other fat, inclosing any kind of meat or fruit, and rendered eatable by boiling; this may be termed a boiled pie. The paste for a meat pudding is usually made with beef suet or marrow, one part of which is chopped as fine as possible, and ultimately mixed with four parts by weight of flour, is made into a paste, with water or milk. With this paste a pudding mould or basin, previously rubbed with butter within, is lined, and the meat is added, to fill up the vacancy. A lid of paste is now put over the meat, and made to adhere to the margin of the dish. The whole is then laid over with a wetted cloth, dusted with flour to prevent the dough sticking to it, and then boiled in water till the pudding be sufficiently cooked.

The other kind of pudding is a batter, composed of eggs, butter, and flour, or any other farinaceous substance, occasionally enriched with the admixture of fruit, sugar, and spices, and rendered eatable either by boiling in the manner stated, or by baking in an oven.

PULSES.—All vegetables of the pulse kind are liable to strong objections as articles of food. They are very indigestible, heating, flatulent, and moreover, they contain little nourishment. Both pease and beans, whether green or dried, are apt to oppress the stomach if eaten too plentifully; and are consequently fitter for the strong and laborious, and those who take much exercise. Pea-soup, although most grateful in cold weather, is indigestible to weak stomachs. French beans are, however, an excellent vegetable production; that is, the young green pod, as it is usually eaten with us. The best pot herbs are asparagus and artichokes, and are beneficial to those troubled with gravel. Young spring greens and cabbages are wholesome, but after the spring sea son they become indigestible, flatulent, and injurious. Young brocoli and cauliflowers are also useful vegetables; also spinage.—See *Pease, Salads, &c.*

PUMPKINS or POMPIONS.—(*Cucurbita*, L.)—There are three kinds of pumpkins, all of which are cooling and emollient. They are difficult of digestion, weaken the stomach, and create flatulent colic. They agree best in hot weather with young bilious people; but persons of a cold phlegmatic constitution ought to abstain from them. They are usually prepared for the table with some aromatic herbs, as parsley, mustard, onions, pepper, &c. They are also preserved in sugar, in order to render them more wholesome and pleasing to the taste. They contain an oil in the seed procured by expression, which is recommended to soften the skin and make it softer. Pumpkins ought to be tender, fresh gathered, and with a white and soft pulp.—See *Melons.*

PUNCH.—Of punch we shall say nothing further (see *Ardent Spirits*, p. 23), than, as the chaplain in Jonathan Wild observes, "it is a much better orthodox liquor than wine, for there is not a word spoken against it in the Scriptures." Ardent spirits, however, are rendered still more contracting, and prejudicial to the stomach, when combined with acids, as in punch. Punch is made in various ways:—

1. *Wine Punch.*—Arack, two pints; juice of twelve lemons; white sugar, one pound; port wine, two pints; hot tea, six pints.

2. White sugar, three quarters of a pound, flavoured by rubbing off the yellow peel of three lemons; port wine, one gallon; boil, adding at the end, cinnamon, half an ounce; strain, and add arack, one pint, and juice of nine lemons.

3. *Tea Punch.* — Hot tea, two pints; arack, half a bottle (about thirteen ounces and a half); white sugar, four ounces, flavoured by rubbing off the yellow peel of four lemons; add juice of eight lemons.

4. *Cold Punch.*—Arack, port wine, and water, of each two pints; juice of eight lemons; white sugar, one pound.

5. *Iced Punch.* — Champagne, or Rhenish wine, two pints; arack, one pint; juice of six lemons; white sugar, one pound, flavoured by rubbing off the yellow peel of six lemons; ice as cream.

6. *Shrub Punch.*—Lemon or lime juice, one pint and a half; strain, and add white sugar, four pounds, rubbing part of it upon twelve of the lemons to get off the yellow peel, before squeezing them; rum, four pints: used to make punch, by putting half a pint into two pints of hot infusion of tea.—See *Shrub, Swig, Wassail Bowl.*

PURSLAIN.—Grows in gardens, is put into cooling broths and salads; it purifies the blood, allays sharp humours, is good against the scurvy, and expels worms. It is hard of digestion and creates wind. It agrees in hot weather with young persons of a hot and bilious constitution.

PUTREFACTION.—A state of decay, or rottenness. A change of matter from one condition to another; illustrated by the putrid or putrefactive fermentation; the spontaneous decomposition of such animal and vegetable substances as exhale a fetid smell. The solid and the fluid matters are resolved into gaseous compounds and vapours, which escape, and unite an earthy residuum. The requisites to this process are,

1. A certain degree of humidity,
2. The access of atmospheric air,
3. A certain degree of heat:

hence the abstraction of the air and water, or humidity, by drying, or its fixation by cold, by salt, sugar, spices, &c., (see *Drysalting*), will counteract the process of putrefaction, and favour the preservation of food, on which principle some patents have been obtained.—See *Fermentation*, &c.

PYRO-ACETIC ACID. — An acid obtained by the destructive distillation of the acetates, from which a modified vinegar escapes.

PYRO-CITRIC ACID.—A peculiar citric acid, obtained by the assistance of fire, namely, by distilling citric acid.

PYROLA ROTUNDIFOLIA. See *Winter Green.*

PYROLIGNEOUS.—Of or belonging to a peculiar acid, thus called from its being distilled from wood by means of fuel.

PYROLIGNEOUS ACID.—An acid distilled from wood. In the destructive distillation of any kind of wood, an acid is obtained, which was formerly called acid spirit of wood, but now pyroligneous acid.

Fourcroy and Vauquelin, French chemists, shewed that this acid was merely the acetic, contaminated with empyreumatic oil and bitumen. The purified wood vinegar, which is used for pickles and culinary purposes, has commonly a specific gravity of 1.009, when it is equivalent in acid strength to good wine or malt vinegar of 1.014. It contains about one twentieth of its weight of absolute acetic acid, and nineteen twentieths of water. Moderately rectified pyroligneous acid has been recommended for the preservation of animal food; but the empyreumatic taint it communicates to bodies immersed in it, is not quite removed by the subsequent ebullition in water.

PYRUS.—The name of a genus of plants in the Linnæan system. Class, *Isocandria;* order, *Pentagynia.*

PYRUS COMMUNIS. — The common pear. This fruit is analogous to that of the apple, but more delicately flavoured. Its juice, when fermented, forms perry. Pears when ripe are easy of digestion, when not consumed in excess.

PYRUS CYDONIA.—The systematic name of the quince-tree.—See *Quince.*

PYRUS MALUS.—The systematic name of the apple tree. The common crab tree is the parent of all the vast variety of apples at present cultivated. Apples, in general, when ripe, afford a pleasant and easily digestible fruit for the table; but when the stomach is weak, they are very apt to remain unaltered for some days, and to produce dyspepsia. Sour fruits are to be considered as unwholesome, except when boiled or baked, and rendered soft and mellow with the addition of sugar.—See *Apples.*

Q.

QUAIL.—Quails are considered by some authors to be very bad food, but on what grounds they have not shewn. They are rather difficult of digestion, especially when old.

The quail is not much bigger than the thrush, finely feathered, and has a pleasant note. Averroes says that it has good juices, and that it is good for persons recovering from sickness, as well as for those who enjoy perfect health. Galen, Pliny, and Avicen, assert, on the contrary, that the quail is very dangerous food; and Galen says that he had seen several persons in Phocis, Bœotia, and Doris, that fell into convulsions and epilepsies, that had eaten of them, which he imagines was produced in consequence of the quails of the country feeding upon hellebore; though this plant seems to be more likely to cure than to cause epilepsy. The quail does not rise high above the earth, and flies heavily, for which reasons Pliny calls it rather a terrestrial than an aerial bird. It runs extremely quick, and is as wanton and lascivious as the partridge.

QUAVIVER. *(Sea Dragon)*.—A fish of excellent taste. It is tender, firm, short, and is easy of digestion. There are two sorts, the great and small, the last of which only is used for food. It usually frequents stony and sandy places. It has sharp venomous fins on its back, with which it defends itself against the fishermen. If they are pricked with them, the place swells, accompanied with pain, inflammation, and fever. These little fins do not lose their piquancy even after the fish is dead; for when the cooks happen to be pricked by them, they suffer the same inconvenience as if the fish had been alive.

QUASSIA, (*Quassia Excelsa*).—The virtues of quassia were discovered by one Quassy, a negro, from whom the secret was bought; for a full narrative of which see Stedman's account. It is the wood of the root of a middle sized tree, growing in Surinam. The bark is preferred by the inhabitants. It is used in debility of the stomach and intestines, and in fevers. It is one of the purest, most concentrated bitters, and yet one of the least astringent; so that it is not calculated for hemorrhages, or affections of the intestines; and still it is not a warm bitter, like orange peel, or chamomile. It is frequently used in intermittents. Tissot recommends it for restoring the tone of the stomach, when diminished by venereal excesses. It prevents colic, counteracts spasm, is useful in low fever, and corrects the tendency to vomiting from mere indigestion: *e. g.*

Take—The wood of quassia, 1 dr.
Boiling water . . 8 oz.
Infuse for six hours.

To two ounces of the strained infusion add a drachm of the compound tincture of lavender, which is directed to be taken three times a day. The consumption of quassia in breweries is immense; it is introduced into the malt in the form of extract. It is probably the most harmless of all bitters. The physicians prescribe the decoction to their patients, to the extent of a quarter of an ounce of the bark in a day,—as much as the brewer was accustomed to put into nine gallons of his porter. When the porter brewers made use of quassia, it was either in small chips or rasped, and put into the copper (with the hops), in a quantity of about an ounce to the barrel.

QUENELLES.—A fine farce. It is generally poached when used.

QUINCES, (*Pyrus Cydonia*).—There are two species of quinces, namely, the apple and pear quince: the latter are the most wholesome, particularly those of Portugal. They are an excellent antiseptic, and, in this respect, the best kind of fruit, as they contain an acid, and much mucilage. They are not productive of obstructions; but their pulp, like that of all other fruit, is digested with some difficulty. They are generally eaten boiled with sugar, and are excellent in dysentery, on account of their copious mucilage. Quince seeds made into a decoction, are demulcent and expectorant.

QUIN'S SAUCE.—The following is commonly called Quin's Sauce, "and was given to me (Dr. Kitchener) by a very sagacious sauce-maker."—*Cook's Oracle*, p. 339.

Two wine-glasses of port, and four of walnut pickle, four of mushroom ketchup, and half a dozen anchovies, pounded; the like number of echalots, sliced and pounded; a table-spoonful of soy, and half a drachm of cayenne pepper: let them simmer gently for ten minutes; strain it; and when cold, put it into bottles; well corked, and sealed over, it will keep a considerable time.—See *Condiments*.

R.

RABBITS.—Rabbits are either wild or tame; the first kind are the most dainty and agreeable food, having a greater opportunity of feeding on sweet aromatic herbs, such as thyme, juniper and the like, which gives their flesh a richer and more pleasant flavour. They differ much in respect to their colour; some are white and black, others yellow and party-coloured. They are very nourishing and afford good food. When too young they are not so wholesome as when of a middling age and size; if they be too old, their flesh becomes dry, hard, and of difficult digestion. Rabbits are in better condition for the table in winter than in summer, because their flesh is then more tender and mellow; and agrees well with any age or constitution.

Though a rabbit is in many respects like a hare, yet the flesh of the one differs somewhat from the other in taste: the rabbit moister, more tender, as well as more juicy.

Rabbits to Choose and Carve.—See *Poultry, &c.*

RADISH (*Raphanus Sativus*, L.)—The radish is an annual, a native of China, and mentioned by Gerard, the herbalist, in 1584. The leaves are rough, lyrate, or divided transversely into segments, of which the inferior less ones are more remote. In some varieties, the root is fleshy and fusiform; in others, sub-globular; white within; but black, purple, yellow or white, on the outside; the flowers pale violet, with large dark veins; pods long with a sharp beak. Formerly the leaves were often boiled and eaten; but now the roots are chiefly employed. These are eaten raw in spring, summer, autumn, and winter. The young seedling leaves are often used with cresses and mustard, as small salad; and radish seed-pods, when of plump growth, but still young and green, are used to increase the variety of vegetable pickles, and are considered a tolerable substitute for capers.

All the parts of a radish may be wholesome, though the root is only used as food; they are pulled out of the earth in spring. Such as are tender, juicy, of a sharp pungent taste, easy to be broken, and not very thick, are the best. They agree in cold weather with phlegmatic and melancholy constitutions, provided they have a good stomach. They act upon the urinary organs, and expel gross substances connected therewith. The seeds of the radish are aperient, but if put alone into the mouth they excite nausea and vomiting. There is another species called horse-radish (*Raphanus Cochlearia*), which is used as a condiment to roast meat; and the infusion medicinally, as a stimulant.

RAISIN (*Vitis Vinifera*).—Raisins are grapes prepared by drying them in the heat of the sun, or in the air, to fit them for keeping, and for some medicinal purposes. Raisins of the sun are a kind of raisins brought from Spain, of a reddish or bluish colour, seeded, and very agreeable to eat. There are various other sorts, denominated either from the place where they grow, or the kind of grape. The finest and best raisins are those called in some places Damascus raisins. These are distinguishable from the others by their largeness and figure, and wrinkled on the surface; soft and juicy within, near an inch long, and seem transparent, when held against a good light; they have a sweet, agreeable, and vinous taste.

The common raisins are the fruit of several species of grapes, which are better or worse, according as they have been more or less carefully cured. The raisins of the sun, or jar raisins, so called, because they are imported in jars, are all dried by the heat of the sun; and these are the sorts used in medicine. All kinds of raisins have much the same virtues; they are nutritive and balsamic; but they are subject to fermentation with juices of every kind, and hence, when eaten immoderately, they often bring on colics. They are not at present much valued in medicine, though they are directed in some compositions, particularly in pectoral decoctions, and other medicines of that intention. Their principal use is in making that favourite Old English dish called a plum pudding.

RAM.—The flesh of the ram is seldom eaten because of its unpleasant smell and rank taste, resembling that of the he-goat. The flesh of the ewe is a little more used, yet not much in esteem, being insipid, viscous, and apt to produce gross humours, and bad juices.—See *Mutton*.

RAMPIONS (*Rapunculus Esculentus*).—A long and small root, about the thickness of one's little finger, white and well tasted; it is sown in gardens, and gathered in its tender state to add to salading. It fortifies the stomach and assists digestion, is far more delicate than turnips or radishes; juice used to allay toothach, an infusion of the seeds used as an eye-wash.

RAPE (*Brassica Rapa*).—The root of this plant is so like that of a turnip, that they can scarcely be distinguished the one from the other but by the shape. They are sown in moist ground, and much used for food. They are nutritive, pectoral, and lenitive. It is, however, hard of digestion, and creates wind. — See *Turnip*.

RAPESEED. — A seed of the cabbage kind; out of which an oil is extracted which is used by hatters; and serves also to burn.

RATAFIA.—A liquor prepared by imparting to ardent spirits the flavour of various kinds of fruit.

1. *Ratafia of angelica.*—Angelica seeds, one drachm; stalks of angelica, bitter almonds blanched, of each four ounces; proof spirit, twelve pints; white sugar, two pounds. Digest, strain, and filter. *Cordial* and *carminative.*

2. *Ratafia of anise seed.* — Anise seed, two ounces; proof spirit, two pints; simple syrup, four pounds. Tincture of vanilla may be added.

3. *Ratafia of cherries.*—Morello cherries with their kernels bruised, eight pounds; proof spirit, eight pints: digest for a month, strain with expression, and add sugar, one pouud and a half.

4. *Ratafia of Grenoble.* — Small wild black cherries with their kernels bruised, six pounds; proof spirit, three gallons; digest for a month, strain, add sugar, six pounds, and a little lemon peel.

5. *Raspberry ratafia.* — Raspberries, eight pounds; proof spirit, four pints; sugar, twelve ounces.

6. *Ratafia of cloves.*—Clove pinks, the white heels pulled off, four pounds; cinnamon and cloves, of each fifteen grains; proof spirit, one gallon; sugar, one pound.

7. *Ratafia of orange peel.*—Fresh peel of Seville oranges, four ounces; proof spirit, one gallon; sugar, one pound. Digest in six hours.

RAY (*Raia*).—There are many species of the ray, all inhabitants of the sea. *Raia* is the name of a genus of fishes of the order *Chondropterygia.* The following are sometimes eaten as food: the *skate;* the *thornback;* the *shark-nosed ray;* the *torpedo* or *electric ray*, which see.

RECTIFICATION.—By rectification, chemically speaking, is understood a second distillation, in which substances are purified by their more volatile parts being raised by means of heat: thus, spirit of wine, æther, &c. are rectified by their separation from the less volatile and foreign matter, which altered or debased their properties.

REFRIGERANT.—That which allays the heat of the body or of the blood.

REGIMEN.—A term employed in medicine to express the plan or regulation of the diet.—See *Aliment*, *Diet*.

RESPIRATION. — The act of breathing. In respiration, the air is received into the lungs by the enlargement of the cavity of the chest. The power which effects this enlargement, in common, by inspiration, is the diaphragm ; but when it is more difficult, the intercostal muscles and the small pectoral muscle assist. The blood of the pulmonary artery being exposed to the influence of the air in the lungs, is converted from a dark colour into a florid red; it is considered to be decarbonised, that is, carbon is emitted, which, combining with the oxygen of the inspired air, forms carbonic acid; a watery vapour is likewise evolved. Others think that oxygen is absorbed, and that carbonic acid, already formed in the blood, is evolved. When the blood has been properly acted upon, the inspiratory muscles relax, while the abdominal muscles, pressing the viscera upwards against the diaphragm, diminish the cavity of the chest, and then expel the air.

Respiration may be obstructed from various causes, seated either in the lungs themselves or the surrounding parts. But from whatever cause this obstruction may arise, it undoubtedly produces all those diseases which proceed from an interrupted circulation. The lungs themselves also being at length compressed, and not suffered sufficiently to dilate, cannot throw off the vapour which arises from them; hence, they are frequently oppressed with moisture. At the same time they are irritated, so that a greater quantity of mucus, and that of a thicker kind than usual, is secreted; by which means the passages through which the air enters them, are stopped up, till a violent cough at length throws off the load. There are other disorders also of the respiration, such as cough and sneezing, which, though at first sight they may seem very dangerous, are not destitute of use, and may even be reckoned among the most salutary attempts of nature to relieve the patient. Often, however, they are attended with danger, or very great uneasiness; namely, they are either too violent or attended with pain. It is necessary, nevertheless, for a physician to know the nature, causes, and effects of these, that he may be enabled to promote them when necessary, and to stop them when they may be hurtful or useless.

RHUBARB.—(*Rheum*, L.). Of rhubarb there are three species in cultivation: the *rhaponticum*, *hybridum*, and *palmatum*, all perennials. The first is a native of Asia, and was introduced in 1573. The leaves are blunt and smooth, veins redish, somewhat hairy underneath; petioles grooved above, and rounded at the edge. This species (the *rheum palmatum*) has been longest in cultivation. The second (*R. hybridum* L.) is also a native of Asia, introduced in 1778. The leaves are large, somewhat cordate, smooth, and of a light green. When under good cultivation, they often measure four or five feet in length, the foot-stalk included. This sort was first introduced as a culinary rhubarb by Dickson, V. P. H. S. about twenty years ago, and is esteemed more succulent than the rhapontic. The palmatum (*R. palmatum*. L.) is a native of Tartary, distinguished from all the others by its elegant palmate leaves. It has been known in this country since 1758, and is generally considered as the true Turkey or Russian rhubarb.

The two first species of rhubarb are cultivated entirely, and the third in gardens principally, for the petioles of the root leaves, which are peeled, cut down, and formed into tarts and pies, in the manner of apples and gooseberries. The hybrid affords the most abundant and succulent supply for this purpose. The medicinal properties of the powdered root of rhubarb are cathartic, and in diminished doses stomachic and astringent. It is in high esteem as a family medicine.

Rhubarb appears originally to have been a native of China and Thibet, but has been transplanted into other countries, and grows well in Europe. It is brought from the East Indies, Turkey, and Russia, and is cultivated in small quantities in England. It possesses considerable stomachic, tonic, and astringent, as well as laxative powers, though, after taking it, there is generally costiveness for a day or two. It is employed in indigestion as a laxative, and in weak bowels, where the intention is merely to free them from their contents without irritating or debilitating them. It is often combined with tonics, whose power, in costive habits, it increases. From fifteen grains to half a drachm is a mild cathartic: it operates slowly three or four hours after it has been taken, without griping, and is more employed than any other astringent purgative, for the following reasons: namely, it does not require a large dose, is very certain in its operation, and does not weaken as many others do. It is used also in hypochondriasis, hysterics, when these affections are attended with costiveness, and in nervous head-ach:

Take—

Turkey rhubarb, nutmeg, of each, in powder .	½ drachm
Extract of chamomile .	1 scruple
Oil of peppermint . .	6 drops

Mix, and make thirty pills, three of which may be taken twice a day, or as occasion may require.

Also take—

Turkey rhubarb	½ drachm
Jalap in powder . . .	20 grains
Extract of chamomile .	6 drops
Oil of cloves	6 drops

Make thirty pills, to be taken as before. In small doses rhubarb acts as an astringent, and is highly serviceable in the bowel complaints of children; and where there are green and slimy motions, it is the principal remedy: *e. g.*

Take—

Rhubarb in powder .	20 grains
Chalk mixture . . .	3 ounces
Spirit of nutmegs . .	2 drachms
Simple syrup . . .	½ ounce

A dessert spoonful every four or six hours, to a child twelve months old. Combined with tincture of opium, it frequently cures diarrhœa. In small doses, it also frequently acts as a stomachic, and increases the powers of digestion: *e. g.*

Take—

Rhubarb	1 drachm
Castile soap	1 scruple
Oil of cloves	6 drops

Make twenty pills, and take one twice a day.

Rhubarb imparts its virtues to water and spirits. The compound tincture of rhubarb is a good preparation, and taken, from six drachms to an ounce, it frequently gives relief in colicky pains of the bowels. Also, combined with magnesia, it corrects flatulence arising from acidity in the stomach, and acts as a tonic purgative. It is one of the best and most approved family medicines of the kind.

RHUBARBIN.—The name employed to designate the principle in which the purgative property of the rhubarb resides. The active principle of this plant is regarded by M. Naniel, of Milan, as a vegetable alkali; but he has not hitherto produced any proof of its alkaline nature.—*Journ. Science*, v. xvii. *p.* 172.

RHUS CORIARIA. — See *Sumach.*

RIBES. — (An Arabian name, properly belonging to an acid-leaved species of rheum; but which botanists, for about two hundred years past, have, by mistake, applied to the currant and gooseberry family, and with which it now remains). The name of a genus of plants in the Linnæan system. Class *Pentandria*, order *Monogynia*. The currant tree. —See *Currants*.

RIBES NIGRUM. — (Black Currant). An indigenous plant (*racemis pilosis, floribus oblongis* of Linnæus), which produces larger berries than those of the red, which are said to be peculiarly useful in sore throats, and to possess a diuretic property in a very considerable degree. The leaves of the black currant are extremely fragrant, and have been likewise recommended for their medicinal virtue, which Bergius states to be Mundificans, Pellens, Diuretica.

RIBES RUBRUM. — (*The Red Currant*). The *racemis glabris pendulis, floribus planiusculis* of Linnæus.

The white currant tree is merely a variety of the red; the fruit of both is perfectly analagous, therefore, what is said of one applies to the other. The red currant is abundantly cultivated in gardens, and, from its grateful acidity, is very acceptable, either as presented by nature, or variously prepared by art, with the addition of sugar. Medicinally considered, it is esteemed to be moderately refrigerant, antiseptic, attenuant, and aperient. It may be used with considerable advantage to allay thirst in most febrile complaints; to lessen an increased secretion of bile, and to correct a putrid and scorbutic state of the fluids, especially in hot and sanguine constitutions; but in temperaments of an opposite nature, it is apt to occasion flatulency and indigestion.

To make Currant Jelly.—Mash the currants, and pass them through a splinter sieve, put the pulp on the fire, stir it with a spoon till it begins to boil; then strain the mass through a flannel bag, to render the juice clear; measure it, and to every pint put one pound and a half of loaf sugar, and let it simmer very gently till you see, by dipping a spoon or skimmer in the jelly, and again raising it, the jelly forms a web upon it, which, if simmered long enough, will remain on the skimmer. Then take it off the fire, let it stand a few minutes till the scum collects on the surface, then remove it, and put the clear fluid into pots. When quite cold, cut pieces of writing paper to the size of the brim of the pots, steep the paper in brandy, and place it on the jelly.—See *Vegetable Jellies*.

RICE (*Orysa*).—An esculent grain, cultivated in the East Indies, and the Carolinas in North America, of an oval figure, and covered with a husk like barley. Rice contains a thin, unelastic, and easily soluble mucilage. It is the general aliment of the people of the East, with whom it answers the same purpose as bread does with us. There formerly existed a prejudice against the use of rice, that it has not only a tendency to produce costiveness, but also blindness—that it produces costiveness is only so far true with people of weakened and languid constitutions, with whom also it is attended with flatulency, which sufficiently accounts for its secondary effects. And as regards its producing blindness, it is scarcely necessary to state that such an idea has no foundation in truth. It is generally considered as astringent, and is, therefore, a popular remedy in diarrhœa—no astringent principle, however, has yet been discovered in its composition; and it is probable that it is indebted for its properties, on such occasions, to the mild and bland mucilage with which it abounds, shielding the intestines from acrimonious humours. To avoid the disposition to costiveness and the consequent flatulence attending the use of rice, it ought to be eaten with the addition of some spice, such as cinnamon, fennel, caraway, aniseed, and the like, — particularly by those of a phlegmatic habit, and slow digestion. In India, where this grain is abundantly consumed, it is regularly eaten with such quantities of pepper, and other strong spices, that Europeans, on their first arrival, cannot partake of this high-seasoned dish. From a custom so beneficial in its physical effects, it may be inferred, that the Indians, though directed more by instinct than scientific induction, are altogether unacquainted with the rules of diet. One of the best preparations of rice is the mucilage, or jelly, which is obtained by boiling two ounces of it ground to fine powder, and a quarter of a pound of loaf sugar, in one pint of water, until it becomes a transparent thick broth: this when expressed through a cloth, and allowed to cool, is a palatable and wholesome jelly.

ROASTING. — The process of dressing meat on a spit which turns before the fire. In roasting, as in boiling, it is presumed that the cook would no more think of using a dirty pot in the one, than a dirty spit in the other; and that before either roasting or boiling be attempted, the necessary culinary utensils are in an equal state of readiness.

In roasting all kinds of meat, it will be a useful method to add a little salt and water to the dripping pan, and to baste the meat a little with it. Dry the meat before putting it on the spit, and dredge it well with flour, and baste it with fresh butter, because it will give a better colour to the meat. The fire should be regulated according to the subject you intend to dress. If it should be any thing very little or thin, then you should have a pretty brisk fire, that it may be done quick and nice; if it be a large joint, then see that a large fire is laid on to cook. Roasting should be done by the radiant heat of a clear glowing fire, otherwise it is in fact baked. The fire should always be clear at the bottom, and when the meat is half done, move the dripping pan and spit a little from the fire, and stir it up to make it burn clear and brisk, for a good fire is a most important material in every branch of cooking. If the substance you are roasting is beef take care to paper the top, and baste it well whilst it is at the fire, not forgetting to throw a sprinkling of salt over it. When the smoke draws towards the fire, it is a sign it is nearly done enough, then take off the paper, baste it well, and dredge it with flour, to make it frothy; but never salt your meat intended for roasting before you lay it to the fire, as that will draw out part of the gravy. If you intend to keep your meat a few days before you dress it, dry it well with a clean cloth, and dredge it all over with flour, hanging it where the air can get to it, but take care that you leave no damp place about it unwiped.

In roasting mutton or lamb, the loin, the chine, and the saddle, must have the skin raised and skewered on, and baste and flour it to froth it up. All other sorts of mutton and lamb must be roasted with a quick clear fire, without the skin being raised. You must be careful to roast veal of a fine red colour; and if it be a fillet or loin, be sure to paper the fat, that you may lose as little of it as possible; at first keep it at some distance from the fire, but when it is soaked put it nearer. Never put meat of any description down to a burnt up fire, if you can possibly avoid it; but should the fire become fierce, place the spit at a considerable distance, and allow a little more time. When you lay down veal, baste it well with butter, aud before you lay it down give the fire a good stir, and examine it from time to time while the spit is going round; keep it clear at the bottom, and see that there are no smoky coals at the front of the grate, which will not only spoil the look and taste of the meat, but hinder it from roasting uniformly. When the meat is nearly done, baste it again, and dredge it with a little flour. A breast of veal must be roasted with the caul on, till the meat be done enough, and skewer the caul on the back side of the breast. Pork should be well done, otherwise it will be apt to surfeit; when you roast a loin cut the skin across with a sharp knife, that the crackling may eat all the better; when you roast a leg of pork score it in the same manner as the loin; stuff the knuckle part with sage and onion, and skewer it up. Put a little drawn gravy in the dish, and send it up, with apple sauce in a boat. The spring or hand of pork, if very young, and roasted like a pig, eats very well, but otherwise it is much better boiled. The spare rib should be basted well with a little butter, a very little dust of flour, and some small shreded sage and onion. Apple sauce is the one only used for this joint. Wild fowls require a clear brisk fire, and should be roasted till they are of a light brown, but not too much, for it is a great fault to roast them till all the gravy runs out, as they thereby lose their fine flavour. Tame fowls require more roasting as they are a long time before they get thoroughly heated; they should be often basted, in order to keep up a strong froth, as it gives them a finer colour and causes them to look better. A large fowl will take three quarters of an hour, a middling one half an hour, and a small one or a chicken twenty minutes. Pigs and geese should be roasted before a good fire, and turned quick; the former will take according to size from an hour to an hour and a half to roast. Hares and rabbits require time and care to see the ends are roasted enough. In order to prevent them from appearing bloody at the neck when they are cut up, cut the neck skin when they are half roasted and let out the blood. Hares will take an hour; woodcocks twenty minutes; partridges from twenty to twenty-five minutes. Slow roasting is equally advantageous and important as quick roasting. The same rule as to time, will be found on calculation to be as near the mark as possible, viz., a quarter of an hour or a few minutes over to the pound. Half an hour before your meat is done make some gravy, and just before you take it up put it near the fire to brown,

"Meats in general," says a French author,* "ought not to be attacked by too fierce a fire, if they be of a certain size, because the exterior would be grizzled and burnt up, before the interior could be baked; on the other hand a piece of roast must not be too long exposed to a moderate heat, because that heat which is sufficient to carry off every liquid principle and coagulate the albumen, would condense and dessicate the muscular fibres: it ought moreover to be remarked, that the sapidity of viands, roasted or boiled, depends either on the flavour peculiar to the meat, or on a partial decomposition of the skin, muscles, and fat. Sapid substances are formed by the sole action of the fire, which did not previously exist in the uncooked meat. These substances are the prussic and toonic acids, a little empyreumatic oil, also a little sea salt. All these bodies are stimulant, slightly acrid, they irritate the nerves of the palate, promote the secretion of saliva, and provoke the appetite." We have also the following observations on roasting, from another French writer.†

"The art of roasting victuals to the exact degree is one of the most difficult things in the world to accomplish, and it is easier to meet with half-a-dozen good cooks than one roaster who is master of this branch of his art. All *savants gourmands* are aware that these two important functions cannot be performed by one artist, it is quite im-

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* See Cours Gastronomiques. Paris, 1819. p. 292.

† See Almanac des Gourmands. Vol. i, p. 37.

possible to superintend at the same time the operations of the spit and the stew-pan. No certain rules can be laid down for roasting, its perfection depending on so many circumstances, which are perpetually varying—the age and size (particularly the density) of the pieces, the quality of the coals, the temperature of the atmosphere, the currents of air in the kitchen, the more or less attention of the roaster, and lastly the time of serving up. Suppose, for instance, the dinner is ordered to be on the table at a certain time, if the fish and soup which precede it are much liked, and detained longer than the cook has calculated, or on the contrary they are dispatched sooner than expected, the roasts in the one case will be burnt, and in the other not done enough; two misfortunes, equally deplorable, occur when they may. The first, however, is without a remedy; five minutes on the spit, more or less, decides the excellence of this process of cookery; it is almost next to impossible to hit the *exact time* when the meat ought to be eaten, which gourmands or epicures in roasted materials express, by saying, 'It's done to a turn,' so that there is no exaggeration in saying the perfect roaster is even more rare than the professed cook.

"In small establishments, where the cook and roaster are one and the same person, it is next to impossible the roasts can be well done; the spit claims the exclusive attention, and is an imperious mistress who demands the entire devotion of her slave. But how can this otherwise be, when the attention of the cook at the same time is equally called to watch her fish and soup kettles, her stew pans, and all their accompaniments? It is morally and physically impossible; if she devotes that delicate and constant attention to the roasts which is indispensably requisite, the other parts of dinner will run a great chance to be spoiled, and most cooks would rather sacrifice their characters as roasters than neglect the made dishes and *entremets, &c.*, where they think they can display their culinary knowledge to more perfection, than sacrifice these to the roasts, the excellence of which will only bear testimony to their unremitting patience and steady vigilance."

The only general rules then that can be presented as regards the process of roasting, are a diligent attention to time; a judicious and chemical management of the fire, conformed with frequent bastings, a particular in which our ancestors, as well as in dredging, were very attentive.

The ingredients used as dredgers are—

1. Grated bread mixed with flour.
2. Dried & powdered sweet herbs.
3. Lemon peel dried and pounded, or orange peel mixed with flour.
4. Sugar finely powdered, and mixed with pounded cinnamon.
5. Cinnamon, coriander, and sugar finely beaten and mixed with grated bread or flour.
6. Sugar, bread, and salt mixed.
7. For young pigs, grated bread or flour mixed with pounded nutmeg, ginger, pepper, and yolk of eggs.

The bastings for roast meat consist of fresh butter, clarified suet, minced sweet herbs, butter, and claret, especially for mutton and lamb; cream and melted butter, especially for a flayed pig, yolks of eggs, grated biscuit, orange juice, &c.

ROB.—An old Galenical term for an inspissated juice: juice made thick; the *rob* of elder berries, for instance, evaporated by a gentle heat. Its properties are reputed diuretic and sudorific. The rob of black currants, or the preceding, diluted with water, is used as a detergent or cleansing gargle. The pulps or juices of other sweet fruits may be prepared in a similar manner. —See *Tamarind Pulp.*

ROBORANT.—That which is strengthening.—See *Tonic.*

ROCKAMBOLE. — The *Allium Scorodoprasum* of Linnæus. The root is used for pickles and high-seasoned dishes.

ROCK-SALT. — There are two kinds of rock-salt: the *foliated* and the *fibrous*. The principal deposit of this salt in Great Britain is in Cheshire. According to Henry in 1000 parts are contained 983 of muriate of soda, 6½ sulphate of lime, a little muriate of lime and muriate of magnesia, and ten parts insoluble matter.

ROCK-SAMPHIRE. — (*Crithnum*).—See *Samphire*.

ROCKET. — *Brasscia Eruca.* — *Brassica Erucastrum Sylvestris.*— Garden Rocket. Roman Rocket. Rocket Gentle. The systematic name of the plant which affords the *semen eruacæ. Brassica—foliis lyartis, caule hirsuto seliquis glabris* of *Linnæus.* The seeds of this plant and of the wild rocket have an acid taste, and are eaten by the Italians in their pickles, &c. They are said to be good aperients and antiscorbutics but are esteemed by the Italians for their supposed aphrodisiac qualities.

ROOTS.—Roots may be divided into two kinds: namely, such as are used as food, and those which answer the purpose of condiment or seasoning. The following roots are, or formerly were, used as bread:—

Adams Needle,
Common Arrowhead,
Common Potatoes,
Eastern Birchwheat,
Eatable Arum,
Edders,
Egyptian Arum,
Egyptian Lotus,
Indian Bread,
* Indian Yams.
Spanish Potatoes,
Water Dragons.

ROOTS.—Occasionally eaten as condiments, or for other family purposes.

* Caraway,
* Carrot,
Ceylon Guirlandilla,
* Common Ginger,
* ——— Onion,
——— Tulip,
* ——— Turnip,
Earth Nut,
—— or Pig's Nut,
Heath Peas,
* Jerusalem Artichoke,
* Long Rooted Turnip,
Male Orchis,
Montague Lilly,
* Parsnip,
Purple Goatsbeard,
——— Rooted Turnip,
* Radish,
* Rampion Horse Radish,
* Redbeet,
* Rocambole,
Rush Nut,
Sea Holly, or Eryngo Root,
* Shalots,
* Skirrets,
Spotted Ixia,
Viper's Grass,
* Goats Yellowbeard.

Roots are neither so nourishing, nor so easily digested as animal food. Yet we may consider it as a certain rule, that any kind of aliment, for which we feel a natural and permanent appetite, is conformable to our nature. — (See *Potatoe*). Esculent roots are either of the mild or of the astringent and acrid kind. The former are much more nourishing and less flatulent than the latter, which, however, possess more medicinal properties, such as the chief species of radishes, onions, garlic, and the like.

ROOT OF SCARCITY. — (See *Mangel Wurzel*). Root red outside, white inside, very nutritive; yields sugar; leaves eaten as spinage.

ROSEMARY (*Rosmarinus officinalis*, L.)—The rosemary is a hardy under-shrub, a native of the south of Europe, introduced in or before 1548. The plant is evergreen, rising some-

* Those marked with a star will be found under their respective heads.

times, though rarely, six or eight feet high. The leaves are sessile, linear, dark green above, and greyish or whitish underneath; the blossoms are of a pale colour. The whole plant is highly aromatic. The flowers and calyces of rosemary, form a principal ingredient in the distillation of Hungary water. Infusion of the leaves are made in some drinks. Sprigs of rosemary are used as a garnish; and were given in Shakspeare's time as tokens of remembrance. "There's rosemary, that's for remembrance," says the distracted Ophelia. In some parts of the west of England and Wales, the sprigs of rosemary are distributed to the company at funerals, and often thrown into the grave upon the coffin of the deceased.

ROUX.—Butter and flour blended together over the fire to a proper consistence, either white or brown.

RUM, (*Molasses Spirit*).—Rum is obtained from molasses, by mixing two or three gallons of water with one gallon of molasses; and to every two hundred gallons of this mixture, adding a gallon of yeast; once or twice a day the head as it rises is stirred in, and in three or four days, two gallons more of water are added to each gallon of molasses originally used, and the same quantity of yeast as at first. Four, five, or six days after this, there is added a third portion of yeast, as before, and about one ounce of jalap root powdered, (or in winter 1½ oz.), on which the fermentation proceeds with great violence, and in three or four days, the wash is fit for the still: one hundred gallons of this wash is computed to yield twenty-two gallons of spirit, one to ten over proof.—See *Treacle*.

RUM, JAMAICA.—Rum is a species of vinous spirit, drawn by distillation from sugar-canes, or rather from molasses, which are the dregs of sugar, and the skimming of the sugar pans, of lees or returns, and water. The word rum is the name it bears among the native Americans. To one hundred gallons of lees, or returns as they are called, ten gallons of molasses are added. This affords from ten to seventeen gallons of proof rum, and twice as much low wines. Double distilled rum is rectified to a strength approaching to spirit of wine.

RYE.—In some parts of the Continent, rye is much used; but in England, the consumption of it in ordinary seasons is very trifling. In Germany and Sweden, rye, indeed, forms the chief ingredient of their bread. It has one quality which renders it advantageous to the sedentary and those advanced in years, that is, it obviates costiveness. Rye, by itself, indeed, without mixture of wheat, will actually produce flux in some people; it is, therefore, necessary that the bread be made with two parts wheat to one of rye; and those who even find this too laxative should use brown wheaten bread. The analysis of rye by Sir H. Davy, gave 5 per cent. of gluten. In 3.840 parts of rye flour, M. Ernhof found 2,354 parts of starch.—*Crell's Annales de Chimie*.

The ergot or spurred rye, either alone, or contaminating rye, has long been deemed a poison. It is stated to have given rise to epidemic diseases at various times, in France, Silesia, Prussia, Bohemia, Saxony, and Sweden. Perrault mentions, that in travelling through Bologne, in France, he was informed by some physicians and surgeons of that country, that the rye there was sometimes so corrupted, that those who ate bread made of it were seized with a gangrene, some in one part and some in another—some losing a finger, others the hand or the nose; and that this gangrene was not preceded by any fever, inflammation, or considerable pain, but that the parts fell off of themselves. The early symptoms were numbness, cold, and livid skin, pain and swelling.—(*Phil. Trans.* vol. ii. p. 758.—Also, vol. lii. p. 529). Tissot, in the Philosophical Transactions, presents a very copious account of the disease in question, and divides it into two forms—the spasmodic and gangrenous. It attacked persons of both sexes and all ages, and in some instances only the lower extremities became gangrenous, while in others the upper and lower were alike affected. — (*Phil. Trans.* vol. liii. p. 106).

There is some diversity of opinion as to the real nature of the ergot of rye. Decandolle states, that is a parasitic plant; a mushroom of the genus *scleroticum.* Others assert, that it is a disease of the rye. The analysis of Vauquelin, has not led to a decisive result.

S.

SABATIÈRE, or SORBETIERE.—A pewter or tin vessel, in which are placed the moulds containing the substances to be frozen,

SACK (*Sec*).—A kind of sweet wine, now brought chiefly from the Madeira island, and Palma, one of the Canaries. The first is called Madeira *sec;* the latter, which is the richer and better of the two, Canary or Palm *sec.* The name *sack* is a corruption of *sec*, which signifies dry; those wines being made from half dried grapes; but wine merchants of the present day use the word soft to denote the same quality. The sack of Shakspeare is believed to have been what is now called sherry. Canary sack is an inferior kind of Madeira. Newmann, Palma sack, 6.59; Brande, Teneriffe, 19.79; Vidonia, 19.25, of spirit.

1. SACK POSSET. (SIR FLEETWOOD FLETCHER'S). — It has been shewn, in the course of this work, that good living, and indeed what may be called epicurism, is not confined to solids alone; it is, in fine, more exquisitely mixed up for the palate in the fluid form; for in this shape how many choice products may not be chemically blended, to steep the senses in agreeable oblivion, or to rouse the brow of care from its loathed melancholy.—See *Punch, Swig, Wassail cup or bowl.*

Sack posset may be variously made: the following is the manner in which the name of Sir Fleetwood Fletcher's is fabricated:—

From famed Barbadoes, on the western main,
Fetch sugar ounces four; fetch such from Spain,
A part: and from the eastern coast,
Nutmeg, the glory of an eastern toast;
O'er flaming coals let them together heat,
Till the all-conquering sack dissolve the sweet.
O'er such another fire put eggs just ten,
New born from tread of cock and rump of hen:
Stir them with steady hand, and conscience pricking,
To see the untimely end of ten fine chicken;
From shining shelf take down the brazen skillet;
A quart of milk from gentle cow will fill it;
When boiled and cold, put milk and sack to eggs,
Unite them firmly like the triple leagues;
And on the fire let them together dwell,
Till Miss sing twice—you must not kiss and tell:
Each lad and lass take up a silver spoon,
And fall on fiercely, like a starv'd dragoon.

2. SACK POSSET. (SIR WALTER RALEIGH'S).—Boil a quart of cream with a sufficient quantity of nutmeg; take half a pint of sack, and the same quantity of ale, and boil them well together, adding as much sugar as may be necessary. Heat a pewter dish till it becomes very hot,

cover your basin with it, and let it stand by the fire two or three hours.

3. Sack Posset. (Lady Mallet's). — Take eighteen new laid eggs, white and all; but remove what is called the *tread;* heat them well altogether; then take a quart of cold and a pint of boiled sack, which, being skimmed, add three quarters of a pound of sugar, and a little nutmeg; boil the whole for a short time; then remove them from the fire, stirring them all the while; add the fluid to the eggs gradually, then mix them all together; keep stirring it on the fire till it becomes sufficiently thick to serve.

4. Sack Posset. (Master Rudstone's).—Take sack one part (or brandy the same quantity), a quarter of a pint of ale, and three quarters of a pound of fine sugar, and boil the whole well together; take two yolks of eggs, and the whites of sixteen eggs, let these be well beaten together, add these, and mix them well with the boiling liquor; then take three pints of milk or cream, and boil down to a quart; let it now stand and cool, till the eggs thicken, then add the milk, stir the whole well together, cover it with a plate, and serve it.

SAGE. (*Salvia officinalis.* L.)—The sage is an evergreen undershrub, a native of the south of Europe, and mentioned by Gerard, in 1597, as an inhabitant of our gardens. It rises about two feet high, with wrinkled green cinereous leaves, white, or tinged with white or dusky purple. The flowers are terminal in long spikes, of a blue colour, and appear in June or July. It has a fragrant strong smell, and a warm bitterish aromatic taste, like other plants containing an essential oil.

The leaves are used in stuffings and sauces for many kinds of luscious and strong meats, as well as to improve the flavour of various articles of cookery. The decoction, called sage tea, is usually made from one variety (the small-leaved green, or sage of virtue), but any of the others are equally fit for this purpose.

The varieties of sage are—1. The common, or red: 2. the green: 3. the small-leaved green, or sage of virtue: 4. the broad-leaved, or balsamic. The red, however, is the principal sort in culinary use, having the most agreeable and fullest flavour. The green is next in estimation with the cook; but the small-leaved is generally preferred to those to eat as a raw herb, and for decoctions; while the broad-leaved balsamic species is the most efficacious in a medical way, and is also a tea herb. Any of the sorts of sage may, however, be used occasionally for these alternate purposes.

In gathering sage for use, we are directed to cut or slip off the young side and top shoots neatly; and to be careful not to stub too close, especially towards winter, and during that season. In July and the rest of summer, it is usual to gather some of the young top growth to dry for winter. The plants are to be kept in regular bushy heads by cutting away disorderly growths and the decayed flower-stalks in autumn.

The virtues of sage have been so extravagantly extolled, that, like many other remedies, the plant has nearly fallen into disuse, from the degree of loathing which the panegyrics upon it have excited. In the form of infusion, however, it certainly possesses some power in allaying the irritability of the stomach, and on many occasions it will furnish a wholesome drink. The same observations will also apply to infusions of balm and rosemary. A drink extremely agreeable to the stomach of convalescents may likewise be made, by infusing lemon peel in boiling water, and adding a small quantity of sugar to it.—See *Tea.*

SAGO.—The medullary part, or marrow, collected from a species of palm tree growing in the Molucca and other islands in the East Indies. This substance, although not strictly the fruit of a tree, well deserves the first place here; for it is used as bread by the natives of India, who macerate it in water and form it into cakes. The grains of sago sold in the shops are obtained by a more artificial process; they produce a nourishing and agreeable jelly with water, milk, or broth; but require to be previously cleaned of the dust, mould, or sea-water. To make a complete solution of sago, the first decoction ought to be strained, and afterwards boiled a second time for about half an hour. Prepared in this manner it is a proper dish for the consumptive and convalescent, as well as for those whose digestion is weak or impaired.

In ancient times sago was celebrated as a remedy of great efficacy, as would appear from the following lines, from the school of Salernum:—

"Cur moriatur homo, cui salvia crescit in horto?
Contra vim mortis, non est medicamen in hortes?
Salvia salvatrix, naturæ conciliatrix
Salvia cum ruta, faciunt tibi pocula tuta."

At present, however, it is not considered as an article of much importance. It has the remarkable property in resisting the putrefaction of animal substances, and is in frequent use among the Chinese as a tonic, in the form of tea, in debility of the stomach and nervous system. —See *Tea, substitutes for.*

SALADING.—These generally consist of certain esculent plants and herbs improved by culture, industry, and art of the garden; or according to others, a composition of edible plants and roots of various kinds, to be eaten raw or green, blanched or candied, simple and by themselves, or intermingled according to the season with others; in fine, by salad is understood a particular composition of certain crude and fresh herbs, such as usually are, or safely may be, eaten, with some acetous juice, oil, salt, or other condiments, to give them a grateful gust or flavour. The materials of salads, consisting of roots, stalks, leaves, buds, flowers, &c., are treated under their respective heads, as regards their other properties as well as salads. Under the latter denomination they are here enumerated as follows:—

Alexander,	Hyssop,
Artichoke,	Jack by the Hedge,
Asparagus,	Leeks,
Basil,	Lettuce,
Balm,	Mallows,
Beet-root,	Melon,
Blite, or English mercury,	Mint,
Borrage,	Mushroom,
Buglass,	Mustard,
Buds,	Nettles,
Cellery,	Onions,
Corn Salad,	Orange, sub-acid,
Calicis,	Parsnep,
Capuchin,	Peas,
Capers,	Pepper,
Cucumbers,	Parsley,
Dandelion,	Purslain,
Earth-root,	Rampion,
Elder-flower,	Sage, Red
Endive,	Samphire,
Fennel,	Scurvy Grass,
Flowers,	Skirett,
Garlic,	Trick Madam,
Goats'beard,	Turnips,
Hops,	Viper Grass.

The most eminent principles of the salad tribe of vegetables incline, for the most part, rather to acidity, than any other quality, especially sweet, saline, or succulent; some judgment, therefore, is requisite in mixing and adopting the ingredients which are intended to compose salads, so that they may agree with particular constitutions, by adjusting them so that one may not predominate over the other, at the same time that none of their properties be lost. As it is well known that all edible plants are not alike in taste and virtue the force and activity of some plants lie in the roots, and even the leaves of some bitter roots are sweet, and *vice versa,* and of others in the stem, leaves, buds, flowers, &c.; some exert their vigour, without decoction; others, when a little pressed or contused; others again raw and when mixed with others, and some without any mixture or preparation at all. The collector, therefore, must attend to what he gathers, that they correspond to these qualities, and to make them consist as closely as he can of their very tenderest parts, even to their first rudiments.

SALADS.—OBSERVATIONS PREPARATORY TO THE DRESSING OF.

I. Let the *herbaceous ingredients* be exquisitely culled, and cleansed from all worm eaten, slimy, corroded, dry, spotted, or otherwise vitiated leaves, and let them be rather sparingly sprinkled, than over-much soaked in spring water, especially lettuce of the cabbage kind, whose heads are sufficiently protected by the outer leaves with which they are covered. After washing, let them remain a short time in the cullender, that the superfluous moisture may drain off, and lastly, let them be all gently swung together in a clean coarse cloth, so that they may be in a perfect condition to receive the following seasonings:—

II. The *salad oil* must be very clear, and neither high coloured nor yellow, but with a head rather of a pale olive green, without smell, the least taint of rankness, or any other sensible taste or scent at all, but smooth, light, and pleasant upon the tongue, such as the genuine Omphaline and native Lucca olive afford, fit to allay the tartness of vinegar and other acid, yet gently warming and moistening where it passes.

Some who have an aversion to oil, substitute fresh butter for it, but the latter is so exceedingly clogging to the stomach, that it is by no means advisable.

III. The *vinegar* and other liquid acids must be perfectly clear, neither sour, vapid, nor spent, but the very best white wine vinegar, whether distilled or aromatic, and may be impregnated *secundum gustum,* with the infusion of cloves, gilliflowers, elder, roses, rosemary, nasturtium, &c. enriched with the virtue of the plant.

A verjuice, not unfit for salads, is made of a grape of that name, or of the green immature clusters of most other grapes, pressed, and put into a small vessel to ferment.

IV. The *salt* must be of the brightest bay grey salt, moderately dried and bruised, as being the least corrosive. It must likewise be free from clamminess.

V. *Sugar,* when used as a condiment in salads, ought to be of the best refined sort, white, hard, close, yet light and sweet. And here it may be noted, that the sugar, salt and vinegar are to be proportioned, as well as the plants, to the constitution; the one for cold, and the other for warm stomachs.

VI. The *mustard* must be the best *Tewkesbury,* or composed of the soundest and weightiest *Yorkshire seed,* exquisitely sifted, winnowed, and freed from the husks, a little, but not over much dried by the fire, tempered to the consistence of pap with vinegar, in which scrapings of horse-radish have been steeped; then cut an onion, and put it into a small earthen gallipot, or some thick glass of that shape, pour the mustard into it, and close it well with a cork. The flour and dust of the bruised seed is sometimes preserved in a well-stopped glass, that it may be used fresh when wanted. The seeds of nasturtium are sometimes used as a substitute for mustard.

VII. *Pepper,* whether it be white or black, ought not to be too finely pulverized. The root of the small Burnet saxifrage, dried, is by some preferred to all other peppers.

VIII. The *yolks of fresh eggs,* newly laid, boiled moderately hard, are to be broken and mixed with the mustard, oil, and vinegar, and some cut into quarters, and eaten with the herbs.

Salad Dishes. — Salad dishes should be of porcelain, or of delf ware, neither too deep nor too shallow ; pewter, nor even silver agreeing so well with vinegar and oil, which leave their several tinctures behind. There ought to be one dish, in which the vehicles should be mixed, and another to receive the crude herbs upon which they are to be poured; then, with a fork and a spoon, stir them up together, till all the furniture be equally invested. Some who are good economists pour on the oil alone at first, as more apt to diffuse itself than when mixed with acids, which at last are added. In this manner it is incredible how small a quantity of oil will suffice to spread over a very plentiful dish of salad herbs. The salad-gatherer should be provided with a light, neat wicker basket, divided into partitions.

Salads to Dress. — The ingredients of which you intend your salad to be composed being gathered, and proportioned as above, let the endive have all its outside leaves stripped off, slicing in the white. In like manner the celery is also to have the hollow green stem or stalk trimmed and divided, slicing in the blanched part and cutting the root into four equal parts. Lettuce, cresses, radishes, &c. must as directed be exquisitely picked, cleansed, washed, and put into the strainer, swung, and gently shaken, either separately or together, as may be agreeable to the taste, some preferring the blanched bitter herbs by themselves, others mingle endive, succory, and rampion, without distinction, and generally eat celery by itself, also a sweet fennel,

Guinea pepper and horse-radish may be left out from April to September, and during all the hot months, they are therefore only mentioned in the dressing, which should be in the manner stated. Now for the herbs: These being neatly parcelled and spread out upon a clean napkin, are to be mixed together in one of the earthen glazed dishes: then for the *Oxoleon*. Take of clear and perfectly good olive oil, three parts of the best white wine vinegar (lemon or juice of orange if preferred) one part, in which let some scrapings or slices of horse-radish be steeped, with a little salt, (some in separate vinegar gently bruise a pod of guinea pepper, straining both the vinegar and it apart to make use of either, or one at a time, or of both as they please). Then add as much Tewkesbury, or other dry mustard grated, as will lie upon a half crown piece, beat and mix all these well together, but do not add the oil and vinegar, till you are on the point of eating the salad, and then with the yolk of two new laid eggs, boiled and prepared as before directed, squash and bruise them all into a mash with a spoon; and lastly, pour it all upon the herbs, stirring and mixing them till they are well and thoroughly imbibed, not forgetting to sprinkle the aromatic herbs as directed, should you think proper, and garnish the dish with thin slices of horse-radish, red beet, barberries, &c. The liquids may be made more or less acid according to taste. These rules followed, you have a salad for six or eight people accommodated to art.

SALIVA.—The saliva or spittle commonly so called, issues from three distinct sets of glands, distributed over different parts of the mouth, as the parotid, the submaxillary, and the sublingual; and (according to Berzelius) a portion of it equal to 1000, consists of water 992-9; a peculiar animal matter 2-9; mucus 1-4; alkaline muriates 1-7; lactate of soda and animal matter 0-9; pure soda 0-2. (*Med. Chir. Trans.* vol. iii, p. 242). What Berzelius sets down as mucus, is considered by Professor Thompson and Dr. Bostock, to be albumen. This is insoluble in water, and, when incinerated, affords a large proportion of phosphate of lime. The tartar of the teeth is derived from its gradual decomposition upon them.

The recent investigations of Tiedemann and Gmelin prove, however, saliva to be a more compound fluid than was formerly supposed; and one of their principal discoveries is, that the sulpho-cyanic acid, a most active poison, combined with potass, enters into its composition. Its solid contents are found to be one-twenty-fifth per cent.

The quantity of saliva secreted daily is considerable. Nash and Langoni estimated it at a pound in twelve hours. Mr. Cruickshank at a pound in twenty-four hours; but it must vary according to circumstances. This secretion is more copious in children and old persons than in adults; in cold than in warm climates; in the day than the night. The smell or sight of any agreeable food makes the saliva flow into the mouth with considerable rapidity. The same effect results from the irritation of smoking tobacco; and from that of bitter, sour, or salt substances in the mouth. The habit of frequently ejecting spittle from the mouth renders an augmented secretion of it necessary. A similar consequence attends those who talk much; and so large is the quantity of saliva secreted during meals, that Sabatier saw a soldier who, at three times, used to wet several towels with what was discharged from a fistula communicating with the parotid duct. *Traité d' Anat.* tom. ii, p. 171.

In disease the quantity of saliva is sometimes increased, sometimes almost suppressed. Its office is two-fold: that of moistening the mouth in combination with a small portion of mucus secreted by the labial and buscal glands, and that of contributing to the digestion of the food in the stomach and duodenum. Under the influence of the irritating passions, and especially of violent rage, it assumes a frothy appearance, and in many animals, becomes poisonous. It is said, indeed, to become so sometimes in man himself. *Hoffman, Dissert. de Saliva ejusque Morbis*, p. 24.

When the saliva is secreted in a healthy proportion, and the various muscles of the mouth perform their proper office, it is never discharged from the mouth, unless voluntarily; but passes rapidly from the fauces into the gullet. But it may be secreted immoderately, or the muscles of deglutition may not properly perform their functions: and, in either case, the saliva will flow from the mouth involuntarily, accompanied with a specific difference of symptoms, which may be distinguished into salivation and drivelling.

SALMI.—A highly seasoned hash so called.

SALMO.—The name of a genus of fishes, of the order *Abdominales.* The salmon.

SALMO ALPINUS. The red char. This beautiful and delicate little fish, and the *salmo carpio*, or gilt char, are found in the Westmoreland lakes, and in those of Wales and Scotland. They are very rich, and hard of digestion.

SALMO EPERLANUS. The smelt. A beautiful little fish, found in great abundance in the rivers Thames and Dee, and in the European seas, between November and February. It is a great delicacy when in season, but not easily digested by weak stomachs.—See *Smelt.*

SALMO FARIO. The common fresh-water trout. The flesh of this fish is very delicate and rich, but hard to digest.

SALMO LACUSTRIS. The lake trout.

SALMO SALAR. The common salmon.—See *Salmon.*

SALMO SALMULUS. The samlet: the smallest of the British species of the *Salmo* genus. It is found in the river Wye, and up the Severn.

SALMO THYMALLUS. The grayling salmon, which somewhat resembles our trout. It inhabits the rivers of Derbyshire, and some of those of the North, and near Christchurch, in Hampshire. It is much esteemed for the delicacy of its flesh, which is white, firm, and of a fine flavour, and is considered as in the highest state of perfection in the depth of winter.—See *Trout.*

SALMO TRUTTA. The bill trout.

SALMON *(Salmo Salar)*.—The salmon is a northern fish, being unknown in the Mediterranean sea, and other warm climates; and, according to some, breeds in the sea; but the opinion of others seems better warranted, that it propagates in the clear sandy parts of rivers, remote from their mouths; hence Walton, the celebrated angler, styles the salmon the king of fresh-water fish.

This fish is considered as one of the greatest delicacies. It is rich, and of difficult digestion to weak stomachs; and with some, whose stomachs are not particularly feeble, it uniformly disagrees. The pickled, salted, and smoked, though much eaten, are only fitted for the very strong and active.

The chief salmon fisheries in Europe are along the coasts of England, Scotland, and Ireland. The fishing usually begins about the first of January, and ends by the last of September. There are stationary fisheries in Ireland, Norway, and the Baltic; but those at Cranna, on the river Ban, near Coleraine, in Ireland, at Berwick upon the Tweed, and those on the Don and Dee, and other Scotch rivers, are the most considerable. The capture of salmon in the river Tweed, about the month of July, is prodigious; it not being uncommon to take from fifty to one hundred fish at one haul of the net. Great numbers of these are sent to London in ice, which has been found to preserve them for a considerable time. In consequence of this discovery several ice-houses have been built at Berwick; and the quantity of ice put into them yearly is astonishing. Dr. Fuller, in his history of this town, says that in the winter of 1798, the two companies laid in 7000 cart loads, at the expense of 450*l.* The earliest salmon that comes in season to the London market is brought from the Severn, and begins to come into season the beginning of November, but very few so early, perhaps not above one in fifty, as many of them will not shoot their spawn till January, or after, and then continue in season till October, when they begin to get very thin and poor. The principal supply of salmon is from different parts of Scotland, packed in ice, as already observed, and brought by water; many of which are spoiled unless the passage be quick. Salmon gwilts, or salmon peel, are the small salmon, which run from about five or six pounds to ten pounds, are very good fish, and make handsome dishes of fish, sent to table crooked in the form of an S. Berwick trout are distinct fish from gwilts, and are caught in the river Tweed, and dressed in the same manner as the gwilt. *Calvered* salmon is that caught in the Thames, and cut into slices alive; and some few salmon are brought from Oxford to London alive, and cut. A few slices make a handsome genteel dish, but it is generally very expensive.

Salmon requires almost as much boiling as meat, about a quarter of an hour to a pound of fish. A quarter of a salmon will take almost as long boiling as half a one; and you must consider the thickness, not the weight. Ten pounds of fine full-grown salmon will be done in an hour and a quarter. The thinnest part of the fish is the fattest. If your fish be split, put it on to boil in warm water; if not split, in cold water. If underdone, salmon is very unwholesome. It is usually served up with shrimp or anchovy sauce. The Thames salmon is preferred in the London market.

In some parts of Wales, salmon is cleaned and boiled as soon as caught, and sent up to table cold. In this state it is very good, eaten with pepper and vinegar. Salmon is most plentiful about Midsummer; the season for it is from February to September. Some sprigs of fresh gathered fennel are the usual accompaniments.

SALMON, PICKLED.—Salmon may be pickled in the following manner. The fish is to be cut into proper pieces, but the scales are not to be taken off. Make a brine strong enough to float an egg, in which boil the fish; throw in liquor just sufficient to cover it. Do not over-boil it. When boiled enough, lay the fish slantingly, to drain off all the liquor. When cold, pack it close in the kits, and fill them up with equal parts of the liquor the salmon was boiled in (having previously well skimmed it), and the best vinegar; let them stand for a day, fill up again, striking the sides of the kit with a cooper's adze, until the kit will receive no more; then tread down as close as possible. This is the finest condition of the fish when fresh. *Or,* Boil as previously directed; then take the salmon out, and boil the liquor with bay leaves, peppercorns, and salt; add vinegar, when cold, and pour it over the fish.

The three indispensable marks of the goodness of pickled salmon are, 1. The brightness of the scales, and their sticking fast to the skin; 2. The firmness of the flesh; and, 3. Its fine pale rose colour: without these it is not fit to eat, and was either stale before it was pickled, or has been kept too long after.

Pickled salmon warmed by steam, or in its pickle liquor, is a favourite dish at Newcastle.

SALSAFY. (*Tragopogon pratense).*—The common goatsbeard. The young stems of this plant are eaten like asparagus, and are a pleasant and wholesome food. The root is also excellent, and was formerly used medicinally as a diuretic. It is more easily reared in this country than asparagus.

SALT.—Salt is either procured from rocks in the earth, from salt-springs, or from sea-water. The famous salt mines of Wielitska, near Cracow, in Poland, have been worked upwards of six hundred years, and yet present no appearance of being exhausted. Esperie, in Hungary, has also a noted salt mine. Lymington, in Hampshire, though its manufacture is greatly on the decline, still makes various kinds of excellent salt, both medical and culinary; there is one admirable salt spring at Droitwich, near Worcester, and Cheshire abounds in saline waters.

Salt corrodes the fibres of plants, disorganises the connection of parts too firm for solution in the stomach, dissolves the glutinous particles, and prepares them for being better digested. Provisions of a tough and viscid consistence require much salt; for instance, beef, mutton, fish, peas, beans, &c. Hence, salt beef and herrings, agree so well with vegetables, because the abundance of salt in the former, seasons the latter. But too copious a use of salted provisions is extremely prejudicial; they weaken the solids, the blood becomes thin, acrid and disposed to putrescency; and hence, arise scurvy in all its stages, eruptions of the skin, consumptions and other diseases.—See *Scurvy.*

There is comparatively little danger of using too much salt with fresh provisions, as the only injury arising from an excess of this article would be a slight relaxation of the bowels. The importance and value of salt as an introduction into food, becomes continually more evident, as its medicinal properties are rendered more distinct and fully known. Among other salubrious properties, may be mentioned its *anthelmintic* virtues, which have been rendered very evident by the publication of some late cases. It appears that whenever salt is denied to the human being, diseases of the stomach are general, and that worms are engendered in the body; and in one instance, where a person, from aversion to that substance, had refused it either in food, or in any other form, they appear to have been the consequence, and remained for many years. In Ireland, salt is a well-known remedy for *bots* in the horse; and among the poor people, a dose of common salt is esteemed a cure for the worms.

Lord Somerville attributes the health of his flock of 203 Merino sheep, which he purchased in Spain, principally to the use of which he has made of salt for the last seven years on his farm. These sheep having been accustomed to the use of salt in their native land; his Lordship considered, that in this damp climate, and in the rich land of Somersetshire, it would be absolutely necessary to supply them with it regularly. A ton of salt is used annually for every 1000 sheep; a handful is put in the morning on a flat stone or slate, ten of which set a few yards apart are enough for one hundred sheep. Of a flock of near 1000, there were not ten old sheep which did not take it kindly, and not a single lamb which did not consume it greedily. Salt is likewise a preventive of disorders in stock fed with rank green food, as clover or turnips, and it is deemed a specific for the rot.

In order to obtain salt as pure as possible, and free from the bitter magnesia, which is a great promoter of putrefaction, the following simple but ingenious process invented by Lord Dundonald, may be easily adopted:—Dissolve as much common salt in a given quantity of water, as it is capable of containing in solution. Take another quantity of salt not larger than the former, and put it into a glass funnel, or similar vessel of wood or earthenware, which ought to be lined with coarse thick linen cloth. While the strong brine is hot, pour it over the dry salt, of which it will not dissolve a particle, but merely wash away the magnesia and other impurities adhering to its surface; and by repeating this affusion several times, the washed salt will become tolerably pure. The whole of this process depends wholly on the principle that water can dissolve only a certain quantity of salt, and that the magnesia may be washed away with such a supersaturated solution, while the salt to which it adheres remains insoluble. Salt thus purified, will doubtless be more wholesome, and more effectual for all the purposes of salting and pickling provisions; as the magnesia contained in the common salt renders double, perhaps treble the quantity necessary, which would be required were it in a pure state, or deprived of the magnesia.

SALT OF STEEL. — See *Sulphate of Iron.*

SALT OF TARTAR.—See *Tartar.*

SALT, PRIMITIVE. — Under this classification are comprehended, those salts which are considered as simple or primitive, and which are occasionally called simple salts. This order is divided into three genera, comprehending saline terrestrial substances, alkaline, and acids.

SALTS, NEUTRAL.—Under the name of neutral or secondary salts, are included such substances as are composed of two primitive saline substances, combined together in a certain proportion. Such salts are called neutral, because they do not possess the characters of primitive salts—that is, they are neither acid nor alkaline; *e. g.* Epsom salts, nitre, &c. But in many secondary salts, the qualities of one ingredient predominate; as tartar or supertartrate of potass, has an excess of acid; borax, or subborate of soda, an excess of base. The former are termed acidulous, the latter subalkaline salts.

SALTPETRE, (*Nitre*).—A neutral salt formed by the union of the nitric acid with the vegetable alkali. It exists in large quantities in the earth, and is continually found in uninhabited places. It is found ready formed in the East Indies, in Spain, in the kingdom of Naples, and elsewhere in considerable quantities. The uses of nitre are various. It is of great use in the arts. It is added to common salt for preserving meat, to which it gives a red hue; it is an ingredient in some frigorific mixtures; and it is prescribed in medicine as cooling, febrifuge, and diuretic; and some have recommended it mixed with vinegar, as a powerful remedy for the sea-scurvy. It is from this salt that one of the most powerful acids, (*nitric acid*) is obtained.—See *Hams.*

SAMPHIRE. (*Crithnum Maritimum*), sea-fennel.—A low perennial plant, growing about the sea-coast in several parts of the island. It has a spicy aromatic flavour, which induces the common people to use it as a pot-herb. Pickled with vinegar and spice, it makes a wholesome and elegant condiment, which is in much esteem.

SANGUIFICATION.—A natural function of the body by which the chyle is turned into blood. Its uses are the generation of blood, which serves to replenish the blood vessels, to irritate and stimulate the heart and arteries, to generate or cause heat, to secrete the humours, and to excite the vital actions.—See *Chyle. Nutrition. Secretion.*

SAUCES.—Sauces are intended to heighten the flavour and to give a higher degree of zest to any dish, whether it be butchers' meat, fish, fowl, or vegetables. In those kinds of relishes there is but little variety in England; and it was rather satirically thought, with no less truth, that "the English had a great variety of forms of religion and no variety in their sauces; whereas, they had uniformity in the former, aud an infinite variety in the latter." Melted butter forms the basis of most English sauces. Melted butter and oysters; melted butter and parsley; melted butter and anchovies; melted butter and eggs; melted butter and shrimps; the same and lobsters, and capers, are nearly all the sauces used in England. In addition to these the following flavoury substances are in common use:—viz. mushrooms, onions, spices, sweet herbs, wine, soy, and the usual condiments; but melted butter, gravy, or some ferinaceous mucilage, form the basis or menstruum of all sauces. These substances combined in different proportions are quite sufficient to make an endless variety of piquante sauces, as pleasant to the palate as those of the most confirmed foreign nature. —See *Anchovy, Soy, &c. Lemon Pickle;* also the following:—

SAUCE, Tomatace.—Love apples q. s., stew them in a little water and pulp them through a sieve, then add common salt, ginger, cayenne pepper, and vinegar; boil, strain, and bottle.

————, Quin's. — Soy 8lb.; walnut ketchup, mushroom ketchup, of each, 2 gallons; anchovies 8lb. cayenne pepper 8oz. garlic 1lb.

2. Distilled vinegar 1 gallon, soy 1lb. allspice 8oz.

3. Walnut pickle half-a-pint; ketchup half-a-pint, anchovies No. 6, garlic, 6 cloves, cayenne pepper one drachm.

————, Coratch,—Mushroom ketchup 6lb., walnut ketchup 1lb., Indian soy, Chili vinegar, of each 4oz., essence of anchovies 1oz.—See *Soy, Ketchup.*

Fish-sauce for the whole year.—

Take 24 anchovies and chop them fine, bones and all; and 10 shalots cut small; of scraped horse-radish as much as you can hold between the two fore-fingers and thumb; a quarter of an ounce of mace; a quart of white wine; a pint of water; one lemon cut into slices; half-a-pint of anchovy liquor; a pint of red wine; 12 cloves; 12 pepper corns. Boil all together, till reduced to a quart. Strain off; cover close, and keep it in a cool dry place. Two spoonsful will be sufficient for a pound of butter.

SAUR KRAUT. — Large white cabbages are cut into thin horizontal slices, and placed in a barrel, with a layer of salt at top and bottom, and between each layer of cabbages a board with some weights on it is then put on the top, and it is kept in a cool place for some weeks; a kind of fermentation takes place and vinegar is formed. Some add juniper berries, coriander seeds, tops of anise, or carui seeds, to the salt, as a kind of spice; it may be dried in an oven without any loss of its flavour. Saur kraut is easily digestible on account of the salt mixed with it, and the acetous fermentation it has undergone before it is used, and by which process the greatest part of its fixed air is repelled. It operates powerfully on the first passages, being a most excellent antiseptic; it has proved of singular service at sea in resisting the ravages of scurvy, and curing it in the most alarming stages. We are indebted to Captain Cook for introducing this salutary diet among the sailors, in spite of all prejudices, and thus preserving the health of many brave mariners. Lastly, saur kraut has been found the best preventive of epidemic distempers, particularly of the dysentery, and the putrid and pectorial fevers, which it has even frequently cured.

SAUSAGES.—Whether fried or boiled, sausages are a substantial kind of nourishment; they consequently require a strong stomach and healthy bile to dissolve them. They are not of an acrid nature, provided they have not too much pepper in their composition, and be closely filled, so as to contain no air. Blood sausages, usually called black puddings, made of bacon, and coagulated blood, which is totally indigestible, are a bad and ill-contrived article of food, and still more so if they have been strongly smoked, by which process the blood becomes indurated, and the bacon more rancid: thus prepared, nothing can be more pernicious and destructive to the best fortified stomach. The spices usually added to sausages correct, in some degree, their hurtful properties, but are insufficient to counteract the bad and highly disagreeable effects of rancid substances.

I. *To make Pork Sausages.*—Take six pounds of young pork, free from skin, gristle, and fat. Cut it very small, and beat it in a mortar till it be very fine, then shred six pounds of beef suet, very fine, and free from all skin. Take a large quantity of sage, wash it very clean, pick off the leaves and chop it very small. Spread your meat on a clean dresser or table, and then shake the sage all over it, to the quantity of three large spoonsful; shred the thin rind of a middling sized lemon very fine, and throw it also over the meat, with as many sweet herbs as, when shreded will fill a large table spoon. Grate over the whole two nutmegs, and add to it two tea spoonsful of pepper, and a large spoonful of salt; then throw over the suet, and mix the whole well up together. Press the mass down close in a pot, and when you use it, roll it up with as much of the yolk of an egg as will make it roll smooth; make them of the size of a sausage, and fry them in butter, or good dripping. Be sure that the butter in the pan be hot before you put them in, and keep rolling them about. When they are thoroughly hot, and are of a fine light brown colour, take them out, and serve them up. Veal eats very well done in this manner, or veal mixed with pork. If you choose, you may clean some guts, and fill them with the following substances.

2. *Bologna Sausages.*— *Take*

Beef suet	1 pound
Pork	1 pound
Bacon, fat and lean .	1 pound
Veal	1 pound

Cut these up small, and mince them fine. Take a small handful of sage, pick off the leaves, and chop it fine with a few sweet herbs, season pretty high with pepper and salt: take a large gut, well cleaned, and fill it, set on a saucepan of water, and when it boils, put it in, having first pricked the gut, to prevent its bursting; boil it gently half an hour, and then lay it on clean straw to dry.

3. *Hogs Puddings with Almonds.*— Chop fine a pound of beef marrow, half a pound of sweet almonds blanched, and beat them fine with a little orange or rose water, half a pound of white bread grated fine, half a pound of currants, clean washed and picked, a quarter of a pound of fine sugar, a quarter of an ounce of mace, nutmeg, and cinnamon together, of each an equal quantity, and half a pint of sack. Mix these all well together with half a pint of good cream, and the yolks of four eggs; fill the guts half full, tie them up, and boil them a quarter of an hour. You may leave out the currants for a change, though in this case, a quarter of a pound more sugar must be added.

4. *Blood Sausages, or Black Puddings.*—Take a peck of guts, boil them half an hour in water, drain them, and put them into a clean tub or large pan. Then kill your hog, and save two quarts of the blood, and keep stirring it till the blood be quite cold. Then mix it with the guts, and stir them well together, season the mixture with a tablespoonful of salt, a quarter of an ounce of cloves, mace and nutmegs (or half an ounce of allspice) of each an equal quantity. Dry it, beat it well, and mix it. Take a little winter savory, sweet marjoram, and thyme; some pennyroyal stripped of the stalks, and chopped very fine. Of these take just a sufficient quantity to season and give them a flavour, but no more. The next day take the leaf of the hog and cut it into due or little square pieces; scrape and wash the guts clean, then tie one end and begin to fill them. Let the fat be mixed in as they are filled, in considerable quantity. Fill the skins three parts full, tie the other end, and make your puddings whatever length you please. Prick them with a pin, and put them into a kettle of boiling water. Boil them very softly for an hour; then take them out, and lay them on clean straw.

In some parts of Scotland they make their black puddings with the blood of a goose—the head of which is chopped off and the blood saved, which is well stirred till cold, and afterwards mixed with guts or oatmeal, spice, salt, and sweet herbs, according to fancy, and some beef suet chopped. They then strip the skin off the neck, pull out the windpipe and fat, fill the skin, tie it at both ends—make a pie of the giblets, and lay the pudding in the middle.

⁂ M. T. Kerner, a German physician, some years back, discovered a new kind of poison, that arises in smoked meats. It appears from experiments which he has made, that they become subject to some sort of decomposition that renders them venomous. Liver sausages are the most susceptible of it, and the decomposition generally takes place about the middle of April. From his inquiries, the doctor found that of seventy-two persons in Wirtemburg, that had eaten smoked sausages, thirty-seven died shortly, and the remainder were ill for some time after.

SAUTER.—A culinary term: to fry lightly.

SCHIRAS.—The wine of Schiras is not only the best in Persia, but, as some think, in the whole world. It is so extremely potent as to admit two-thirds of water without spoiling the flavour.

SCOMBER.—The name of a genus of fishes of the order *Thoracici.*

SCOMBER SCOMBER. — The systematic name of the common mackerel, a beautiful fish, of easy digestion. It frequents our shores in vast shoals, between the months of April and July (see *Mackerel*). Mackerel in London is rarely fresh enough to appear at table in perfection; and either is boiled too much or the roe too little. The best way is to open a slip opposite the middle of the roe, you can then clean it properly—this will allow access to the water, and the roe will be done as soon as the fish, which is seldom otherwise the case. When it is intended to boil mackerel, they are put into cold water with a handful of salt; they are suffered rather to simmer than boil. A small mackerel will be done enough in about a quarter of an hour. When the eye starts and the tail splits they are done, after which do not let them stand in water a moment longer, as they are so delicate that the heat of the water will break them. The current notion that mackerel are in the best condition when they are full of roe, is not correct, as at that time it is only valuable for its roe, the meat has scarcely any flavour. Mackerel generally make their appearance off the Land's-end about the beginning of April, and as the weather gets warm, they gradually come round the coast, and generally arrive off Brighton about May, and continue some months, until they begin to shoot their spawn; after they have let go their roes, as it is termed, they are called shotten mackerel, and are not worth catching, the roe, which was all that was good of them being gone. It is in the early season, when they have the least roe, that the flesh of this fish is in the highest perfection. There is also an after season, when a few fine large mackerel are caught, namely the herring season, about October, to which some gourmands are extremely partial. These fish having had time to fatten, and recover their health, are full of high flavour, and their flesh is firm and juicy. They are commonly called *silver mackerel,* from their beautiful appearance, their colour being almost as bright when boiled as it was the moment they were taken out of the sea.

SCOMBER THYNNUS. — The systematic name of the tunny fish, which frequents the shores of the Mediterranean. Though a coarse fish it was much esteemed by the Greeks and Romans; and by some is still considered a delicacy.—See *Tunny.*

SCURVY.—The scurvy is a disease of a putrid nature, chiefly affecting sailors, and such as are shut up in besieged places, in consequence, as is generally supposed, of being deprived of fresh provisions, &c. It is characterised by bleeding of the gums, spots of different colours, for the most part livid, particularly at the roots of the hairs, occurring chiefly in cold countries, after living on putrescent salted animal food, with a deficiency of aperient vegetable matter. The scurvy sets in gradually with heaviness, weakness, and unwillingness to move about, together with great dejection of spirits, anxiety and oppression about the region of the stomach, considerable loss of strength, and debility. As the disease advances the countenance becomes sullen and bloated; respiration is hurried by the least motion; the teeth become loose; the gums become spongy, swelled, and bleed upon the slightest touch: the breath is very offensive; livid spots appear on different parts of the body; old wounds that have long healed, break out afresh; old fractures, disunite; wandering pains are felt particularly by night; the skin is dry; the urine small in quantity, turning green vegetable infusions to a blue colour. The last stage of scurvy exhibits a most wretched and truly pitiable condition. The joints become swelled and stiff; the tendons of the legs are rigid and contracted; general emaciation ensues; blood discharges from the nose, ears, anus, and other parts of the body; fœtid evacuations are voided by stool; diarrhœa and dysentery arise, which soon close the wretched scene.

The most frequent Causes of the Scurvy, at Home and Abroad.—It is observed by Boerhaave, that the scurvy infects the northern regions of the earth more than any other; and yet it seems certain that this is not so much occasioned by sharp cold as by other causes. The scurvy, as is well known, attacks, by its worst symptoms, those who navigate to the East Indies, even under the torrid zone; and it has been observed in France, during the greatest heats of summer, that it has made considerable havoc, and that many who were beginning to recover, relapsed, and became much worse. Whilst that able physician, Backstrom, was attentive to these particulars, he was, in a great degree, confirmed in opinion, "that the true and primary cause of the scurvy was no other than too long an abstinence from every kind of fresh vegetables." It is certain that he confirmed this opinion by many and strong arguments. At the siege of Thorn, besides the inhabitants of the city, some thousands of the soldiers were carried off by the disease, whilst nothing of the like happened to the Swedes, the besiegers. It is known that the besiegers had plenty of greens and vegetables, which the besieged were destitute of. Whilst the imperial army was in winter quarters about Temeswar, many thousands of the soldiers died of the scurvy; and, what was remarkable, its rage was entirely confined to the common soldiers, whilst the officers, of all rank, were free from it. But Backstrom observes, that the winter was longer than usual, that the greens and salading in the neighbourhood were destroyed by the late siege, and that, on account of the lakes and marshes near the city, the kitchen gardens were at too great a distance, whence the common soldiers could be supplied with few or no vegetables, though their officers might, by the liberty granted them. But as soon as the earth in the spring yielded new favours, the disease disappeared.

1. *Want of Vegetable Food, &c.—Putrid Smells, &c.*—It is evident that those who go on long voyages, as to the East Indies, are often seized with the scurvy, whilst, for several months together, they are obliged to abstain from vegetables. But as soon as they put in at the Cape of Good Hope, they send their sick to the hospital, and recruit them with broths of fresh meat, in which all kinds of greens are boiled, and with delicious fruits; and the event is so favourable, that, in the course of about fourteen days, they, for the most part, all return to their duty. These observations are confirmed by others, of the famous Cacchi, who before Blackstrom had published his ingenious treatise on the scurvy, thought much the same of the nature and disposition of that disease; whilst he saw it always follow a long abstinence from vegetables; and, on the contrary, that it was soon overcome by a vegetable diet, so that the bowels were not yet corroded and destroyed by an acrimony of too long standing. But as the winter is severe and long, in regard to the people of the northern clime; as for several months the earth, buried under snow, produces no vegetables; and as then they live chiefly on fish,

or flesh dried by smoke or in the air, or seasoned with salt, it appears why they are more liable to the scurvy than other inhabitants of the globe. The want of vegetable food, which disposes to putrefaction, is therefore deservedly reckoned among the causes of the scurvy; and, indeed, in the last stage of the scurvy the putridity is so great, that the wretches emit the smell of dead bodies; and hence also, but in another point of view, it plainly appears why those who are obliged to live in an air contaminated by putrid effluvia, are subject to this disease; those, we mean, who live near the sea, and especially such as live in places that are, from time to time, overflowed by the waters of the sea. Those who have endeavoured to make sea-water wholesome and potable, have met with this particular difficulty, that they were not able to take away the disagreeable and sub-putrid taste; though they could easily separate the sea-salt that was in the water. Whence it is observed, that when, at the recess of the tide, the shore, yet moist, is exposed to the heat of the sun, a nasty stench is diffused through all the adjacent parts; and this stench is more and more noisome, while fishes of many kinds, as well shell-fish as others, are thrown up on the shore, and soon rot under the waves.

If a whale be thrown upon the shore, and there dead, can send forth an intolerable smell for the space of some miles, how must it be when a prodigious number of those beasts lie rotting in the sea? There are but few species of fish used for human food; and the great carcasses of whales, when the fat is cut away, and the flexible cartilages of the fins, are left by the fishermen in the sea. If to these be added the softer marine plants, so many in number, and rotting likewise in the sea, the drowned bodies of so many men and others, we shall easily be able to account why that immense collection of waters is infested with a putrid and very disagreeable smell. Bad smells are, indeed, in a less degree perceptible where the sea is deep, because the bodies, sunk in the bottom of the sea, are covered by a vast column of water, and whatever exhales from them is blown off by the winds. But about shores, where the sea is of no depth, and where places are covered sometimes by the flow of the tide, and sometimes not, this troublesome smell is more perceived; and daily observations shew, that people living in such parts are affected with disease, and frequently with the scurvy. For the same reason, those also are attacked by this disease who live in the neighbourhood of standing waters and marshy grounds, which, in the heats of summer, usually send forth very offensive smells; and more especially if strong and frequent winds do not blow off those noxious exhalations; and they are worse off who live in low, flat, boggy grounds, which are less exposed to the winds.

2. *Scurvy, frequent and inveterate among the Dutch.—Symptoms, Causes, &c.*—There are many such places as those above described among the Dutch, and most of the inhabitants languish with the scurvy. The disease is manifest by their carious teeth and bloody gums, and most commonly they become toothless in the prime of life; yet they linger on for a great while on account of their spirit of industry and perpetual round of labour. This shews, too, that an idle and sedentary life is a disposing cause to this disease; for when animal motion is lessened our humours pass into a glutinous state, and together with acrimony there is generally a siziness of blood; and it has been observed, in those places where the scurvy is frequent, that weavers, tailors, shoemakers, and others, who exercise sedentary arts, are often affected by this disease. We have seen many who, by a laborious and frugal life, had acquired

money enough to live at their ease towards the decline of their years; but these were always advised to exercise their body by walking some miles every day, which, if they neglected, they would soon be disordered by the scurvy. Whenever, in distant navigations, a stormy sea keeps the mariners in perpetual action, they are generally pretty well in health; but when the sea has continued calm for any time, symptoms of the scurvy begin to appear; and, for this reason, expert navigators will compel their crew to some labour, even when it might be unnecessary, whilst the calm lasts.

3. *Living in Cellars, Damp Places, upon Salt Provisions, Putrid Water, &c.*—Living in cellars undergound, and in moist places, is another cause of the scurvy, and the condition of such is made worse by the use of salt provisions. Seamen are obliged to make use of this food in long navigations, because flesh meat cannot be long preserved in a fresh state. Sheep, poultry, hogs, &c., are sometimes fed and kept in ships, that the mariner may at times have a supply of fresh meat and broth; but this never happens in so great a plenty as to be sufficient for all; and such provisions are generally appropriated to the use of the officers of the ship, and the sick; whence, it is evident, that thick, unctuous, and terrestrial humours must be created, with which the muriatic acrimony mixes. As long as by a strong motion of the body the coalescing of these thick humours is hindered, they are in tolerable health, and more particularly if the humours are dilated with copious draughts, and the superabundant salt is washed out of the blood. But whilst the heats under the equator begin to be felt, the water destined for their drink begins commonly to putrify and stink in a very loathsome manner, which makes them nauseate it, or take none of it, or very sparingly. It is true that this putrid water, after some time, begins to deposit a sediment, to become limpid, and again potable, remaining good afterwards; but in the mean time, whilst for several days, nay, even weeks, it casts forth a horrid frouziness, and the seamen abstain from drink, a very bad deposition of the humours arises, whilst neither the sizy state of their blood is sufficiently diluted, nor a sufficient vehicle is afforded to promote sweat and urine, that acrimony, by these ways, may be cleared out of the blood. And those, on the other hand, in whom excessive thirst conquers the loathing of stinking water, swallow down with their drink this putrid infection of the water, which will likewise hurt them, and the same sometimes happens in a scarcity of water when the navigation is protracted to a longer time than common by bad weather.

4. *Unfermented Farinaceous Diet, &c.*—Again, as all crude and unfermented farinaceous diet (such are the different sorts of puddings usually made inEngland by the lower classes), favours the production of a spontaneous gluten; and, as in the scurvy, at least that which is incipient, there is such a siziness of the humours, it appears why such food, taken in any abundance, disposes to the scurvy, especially if hard exercise of the body is used after them. Boerhaave observes, that there is no wholesome pudding made in England but one, which is the bread pudding; and that this, to be good, should be of bread well fermented and well baked, light, and properly seasoned with spice. All puddings of crude flour, and such as are replete with fat and suet, are very pernicious to the health. Strong stomachs of ploughmen may bear them, and such food, but they are very prejudicial to delicate constitutions, and those that lead sedentary lives. Peas, beans, and such like pulse, are of a similar nature, and

being reducible into meal, they equally acquire a lentor, being mixed with water, as meal or flour prepared from other grain. Cheese, though prepared of sweet and mild milk, if it be rather too old, acquires a great acrimony, so as to bite the tongue. It is known that cheese is prepared, with some acid, or the proper coagulum called rennet is instilled into the new milk: then the grosser part is separated from the thin whey of the milk, and pressed within a thick linen cloth, till all the whey goes out. What is then left in the linen cloth consists of the butyraceous parts of the milk and the cheese properly so called; and this cheese when long kept, on account of its thick butyraceous admixture, becomes very acrid, not acid, but rather inclining to an alkaline nature. But when the milk is first deprived of its fat cream, and afterwards coagulated, then the cheese made in this manner becomes less acrid by age, but grows hard like a horn, and, held to the fire, it bends also as a horn, but scorches, burns, and stinks. Cheese, therefore, with an acrimony acquired by age, tends to putrefaction, though prepared from ascescent milk: and, as commonly it is seasoned with plenty of salt, in order for its keeping, it is plain why its use must hurt those who are inclined to the scurvy, even from other causes; and it is known, from daily observations, that the scorbutic perceive all these symptoms, by eating such cheese only for a few days.—See *Cheese.*

5. *Melancholy, a disposing cause to Scurvy.*—Many of the causes of melancholy are likewise favourable for producing the scurvy, whilst they create a stiff siziness in the humours, by dissipating the thinner parts, and fixing the next; and hence the authors who wrote of the scurvy, have placed a great affinity between it and the atrabilious cacochymy. The author of Anson's Voyage round the World observes, that seamen afflicted with the scurvy become cowards, and are terrified with the greatest fear from the most trifling causes; and he also observes, that when any adverse fortune happened, which lessened their hopes of a prosperous return to their country, the violence of the disease was immediately increased, so as to strike with death those that were in the last stage of it; and others, who, though languid, could yet do some duty, were instantly obliged to take to their beds. To the preceding may be added, indolence, confinement, want of exercise, &c.

Scurvy, Treatment of.—As a means, in the first place, of counteracting remote causes of scurvy, which is the effect of salt provision, and the want of fresh meat and vegetables, every ship bound on a long voyage should be well stored with flour, eggs, rice, pearl barley, oatmeal, groats, peas, sago, vermicelli, portable soup, potatoes, and other vegetables in season, sour kraut, raisins, currants, prunes, and other dried and fresh fruits. The ship should be well supplied with spirituous and fermented liquors, as rum, brandy, beer and porter, together with wine, cider, vinegar, and other acids, particularly the concrete juice of lemons, limes, oranges: also with these fruits in their natural state, live stock, smoke-dried provisions, portable soup, and meats otherwise preserved, &c. The voyages of Captain Cook, as well as that of the unfortunate La Peyrouse, prove beyond a doubt, that by due care and proper regimen, seamen may be preserved from the scurvy and other diseases, which formerly have been inseparable from long sea voyages; and that they can endure and support the fatigues of the longest navigations in all climates, in all latitudes, in the midst of fogs, and under a burning sun. But when, from want of any of these precautions, the disease manifests itself among a number of men, let it be where it may, either on shipboard or in garrison, the effects are to be counteracted, first by removing the putrid state of the system, by a diet of fresh animal and vegetable food, but more particularly the latter, to which may be added, the free use of ripe fruits. For ordinary beverage, the patient may drink milk, whey, butter-milk, or wort, or an infusion of milk in spruce. One of the most effectual antiscorbutics, and which may be substituted for others in cases of emergency, is lemon juice, with which most ships going long voyages are supplied. Symptoms may also arise in the course of the disease requiring a separate treatment; such as pains in the belly, which are to be allayed by opiates, &c. sponginess of the gums, and looseness of the teeth, by washing the mouth with gargles of an astringent and antiseptic nature;* foul ulcers to be cleansed and healed by washing them with lemon juice, &c. The bowels in the course of the disease should be relaxed, if costiveness prevail, by drinking decoction of tamarinds, to which a little cream of tartar has been added. The skin may be kept moist by giving a few grains of the compound powder of ipecacuanha, or the like. In order to restore the system after an attack from scurvy, the individual should live upon fresh vegetable and animal food; take the bark with sulphuric acid diluted; live in a free open air; take exercise, and otherwise lead a life of temperance and regularity; for in the cure as well as prevention of scurvy, much more is to be effected by regimen than by medicines.

* *Antiseptic, i. e.* possessing a power of preventing animal substances from passing into the state of putrefaction, and of obviating putrefaction when already begun.—*e. g.*

Take—

Decoction of bark	.	12 ounces,
Tincture of myrrh	.	3 ounces,
Muriatic acid	. .	30 drops,

Make a gargle.

Also,

Take Infusion of roses	.	8 ounces,
Alum	. . . .	2 drachms.

Honey enough to make it palatable.
Mix for a gargle . *Astringent.*

SEBACIC.—Of or belonging to suet, or such fat-like substances.

SEBACEOUS. — Suety: applied to a gland which secretes a suety humour.

SECRETION.—The function of secretion in an animal body, is that process by which a fluid is separated from the blood, though different in its properties from blood. The organs which secrete the various humours are the glands; and the proximate or immediate cause of secretion is a specific action of the arteries of these glands; for every secretion is formed from the extremities of arteries. The secretion of the bile is no exception to this law, for the vena porta, or great vein, which carries the blood from the abdominal viscera (the spleen, mesentery, and stomach) into the liver, takes upon itself the functions of an artery:—thus the mucous glands secrete *mucus;* the salival glands, as the parotid, submaxillary, and sublingual, the *saliva* or spittle so called; the pencilli of the liver, that is, the innumerable branches into which the vena porta is divided after it enters the liver, thus named from their arrangement resembling a hair pencil, the bile; the cryptæ or convolutions of the venal artery upon itself of the kidneys, which are beautifully ramified in the substance of this organ, *urine;* the glands of the breast, the milk in women, &c.

The secreted fluids are the proper stimuli to the receptacles and ducts, through which the secretion is to pass to its place of destination; so that the secretions move along the secretory ducts by means of the contractibility of the coats of the ducts, and the assistance of neighbouring moving powers. Hence the necessity of a healthy secretion to the regular performance of every function connected with the animal economy :—as from whatever cause the function of secretion may be arrested, constitutional derangement more or less, is the consequence ; and thus it continues, is aggravated or diminished, in proportion, as the secretions are restored to their healthy actions, and the reverse.—See *Digestion*, *Nutrition*.

SEEDS, GRAINS, AND PODS OF HERBACEOUS PLANTS

EATABLE.

American Ground Nut,
Angular-stalked Pea,
Arabian Coffee,
Bastard Locust Tou,
Carob, or St. James' Bread,
Cashew Nut,
Chicken Pea,
Chocolate Nut,
Cocoa Nut,
Common Garden Pea,
——————— Bean,
———— Kidney Bean.
Common Walnut,
——— Chestnut,
East India Kidney Bean,
Eastern Macardium, or Malacca Bean,
French Physia Nut,
Hazel Nut,
Incurved podded birds-foot trefoil,
Indian Physia Nut,
Jesuit's Nut,
Lentil,
Pistachia Nut,
Pigeon Pea,
Sea Pea,
Square-podded crimson Pea,
Stone, or Manured Pine,
SweetCassia, orPudding-pipe Tree
Sweet-scented Vanilla,
Sweet and Bitter Almonds,
Tamarind,
Trifoliate-leaved Turpentine Tree,
White-flowering Lupin.

SEIDLITZ POWDER.—A very useful and fashionable compound, composed of dried carbonate of soda and dried tartaric acid, which are mostly in separate parcels. When mixed with a quarter of a pint or more of pure water, it effervesces and forms a pleasant aperient, in imitation of Seidlitz water.

Seidlitz powders may be imitated as follows :—*Take*

Two spoonfuls of Rochelle salts,
Forty grains of carbonate of soda,
Mix, and put into a glass with half a pint of cold water. *Then take*

Thirty-five grains of tartaric acid; or the same quantity of citric acid, which put into another tumbler with half a pint of cold water; then pour the one into the other, and drink them quickly. This makes an excellent cooling draught, similar to soda water.

SHAD.*—The shad is a sea fish, though met with in rivers, to which it usually resorts in the beginning of the spring. When it first leaves the sea, it is lean, dry, and ill-tasted; but after it has been in fresh water for some time, it grows fat, plump, and savoury. Shad is pickled to keep, though in this condition it loses much of its fine flavour. It is very nourishing; but when not fresh it has a certain pungency in it which rather incommodes tender gums, and causes thirst. When taken in the sea it is also a little hard, and not so easy of digestion as that taken in fresh water. It is best in spring, at which season it agrees with all ages and constitutions, if eaten in moderation.

SHADDOCK.—The fruit of the *Citrus Decumana*, a species of orange. In lemons, oranges, and other fruits of that kind, three different substances are met with; namely, the external rind contains an essential oil, strongly astringent and heating; the second or white rind is tasteless; the third part is a salubrious, cooling and acid pulp, highly efficacious in counteracting the putrid tendency and dissolution of the blood. The juice of lemons and limes (see *Lemon*) is one of the strongest vege-

* In Latin the shad is called *alosa*, *ab alendo*, to nourish, because it is very nourishing.—*Lemery*.

table acids,* and that of oranges and shaddocks, though milder, is not less salutary. All these acids are of a saponaceous consistence; they thin or attenuate the fluids, remove obstructions, promote digestion, provoke the appetite, allay thirst, refrigerate the blood, and counteract putrefaction; are an excellent remedy in pectoral, bilious, and inflammatory diseases, and affections of the kidneys. They are also antiscorbutic.

SHALOT. — The *Allium Ascalonicum* of Linnæus. An useful esculent root, possessing all the virtues of garlick, with less pungency, and like onions, garlick, and chives, are stimulant; they assist digestion, relieve the bowels, dispel flatulency, dissolve slime or mucus, and, consequently, are beneficial in diseases proceeding from, or accompanied with, too much viscidity; they also provoke the appetite, and ought to be used principally as spices or medicines. These roots are all powerful expectorants, but should be avoided by hot, irritable, and choleric constitutions. And although they are eaten in large quantities by whole nations, yet, from their penetrating and volatile smell, which they communicate to the breath, it is certain they agree best with individuals of a cold and phlegmatic habit, and where such stimuli may be required.

SHERBET.— A delicious beverage, composed of cream, mixed with various articles, such as almonds, tea, pistachios, coffee, chocolate, &c., and sugar, and then iced. It may also be made with the juice of various fruits, sweetened to the taste. It is a compound liquor, and usually prepared for punch, before the spirit is added.

SHERRY.—A Spanish wine. It may be imitated as follows: loaf sugar, thirty two pounds; sugar candy, ten pounds; water, sixteen gallons; boil, add pale wort (as for Madeira), yeast, one pound, on the third day, and raisins, stoned, eight pounds, and in two or three days more a gallon of brandy. Bung it down for four months; draw it off into another cask, add another gallon of brandy, and in three months bottle it. Inferior to our own fruit wines.—See *Spanish Wines.*

SHRUB.—A spirituous liquor, composed of the juice of oranges, mixed with brandy and rum. *e. g.* Put a quart of Seville orange juice to a gallon of rum, with three pounds of lump sugar, and a handful of the peel, pared extremely thin; let it stand in the cask for 3 months, then filter it through a cloth, and bottle it.

SIESTA.—The afternoon's nap, in which the Spaniards and Italians freely indulge; and, although it agrees with most foreigners in Spain and Italy, it is liable, nevertheless, to bring on apoplexies in cold climates, where meat, and soporiferous malt liquors are used in great quantity. Travellers in warm climates, who may be invited to an afternoon's sleep, ought to observe that the duration of it should be proportioned to the quick or difficult digestion of the individual: a quarter of an hour, or half an hour, is sufficient; and people should always be roused before the expiration of an hour. To sleep in an horizontal position would be prejudicial; the fittest place for this kind of rest is in an arm-chair, or a canopy. The head ought to be well raised, and the body inclined backwards, with a little inclination to the left side. Every thing that has the smallest tendency to impede the circulation of the blood, should be removed, or slackened, otherwise violent headachs will be experienced, and disturbed sleep.—See *Sleep.*

SINAPIS.—The name of a genus of plants in the Linnæan system. Class, *Tetradynamia;* order, *Siliquosa.* Mustard, which see.

SIRLOIN. — The most popular joint of beef is universally allowed to be the loin, which, on account of its once having been actually knighted by one of our kings,* in a fit of royal condescension and jocularity, is now denominated sirloin. This ample joint has given rise to a well-known popular ballad, styled "The roast beef of old England;" and it still continues to cut a conspicuous figure at the tables of all

"—— who hospitably live,
And strangers with good cheer receive."†

Two sirloins joined together, without having the back bone cut asunder, are called a baron of beef.

Thomson places the sirloin at the head of his autumnal feast:

"First the fuell'd chimney blazes wide;
The tankards foam; and the strong table groans
Beneath the smoking *sir-loin*, stretched immense
From side to side, in which, with desperate knife,
They deep incision make, and talk the while
Of England's glory, ne'er to be defaced,
While hence they borrow vigour."

SISYMBRIUM.—The name of a genus of plants in the Linnæan system, so named from their fringed roots. Class, *Tetradynamia;* order, *Siliquosa.*

SISYMBRIUM NASTURTIUM—The systematic name of the water cress, called also *Nasturtium aquaticum.*—See *Water Cresses.*

SITIOLOGY. — (Derived from two Greek words, signifying *aliment,* and a *discourse*). A doctrine or treatise on aliment.

SIUM.—The name of a genus of plants in the Linnæan system. Class, *Pentandria;* order, *Siliquosa.* The creeping water-parsnip (*Sium nodiflorum*), a plant admitted into the Pharmacopœias, as possessing antiscorbutic properties. It is not nauseous, and children may take it readily, if mixed with milk.

SIUM SISARUM.—See *Skirret.*

SKATE.—When good, skate are very white and thick; if dressed too fresh, they are hard and unpleasant to the taste; they should therefore be kept a day or two, but not long enough to produce an unpleasant smell.

SKATE, To Boil.—Put it into a fish kettle, with cold spring water, and plenty of salt; as soon as it boils set it aside, to simmer gently till done, and serve it up on a fish plate, with anchovy sauce in a boat.

SKATE, To Fry. — The skate must be nicely crimped, then tossed on an egg, beaten up with pepper and salt, then on crumbs of bread, laying them on paper as they are done: have ready a stewpan nearly full of lard; when very hot, put in two or three pieces at a time to fry quickly, and when thoroughly done, put them on paper to drain from the fat. Serve them up in a dish garnished with fried parsley, and shrimp sauce in a boat.

SKINK (*Scincus*). — An amphibious animal of the lizard species; caught about the Nile, and thence brought in a dried state to this country. It is remarkably smooth and glossy as if varnished. The flesh of the animal, particularly the belly part, has been said to be diuretic, alexipharmic,* aphrodisiac†, and useful in leprous disorders.

* The second Charles, the merry king. See "The Knighthood of Sir-Loin," in a work entitled "The Merry Droll."

† The hospitality of real benevolence gives what is plain and substantial, with kind looks, kind manners, and a hearty welcome.

* A medicine supposed to preserve the body against the power of poisons, or to correct or expel those taken. The ancients attributed this property to some vegetables, and even waters distilled from them. They, however, are now but seldom used.

† That which excites a desire for venery.

SKIRRET, *(Sium sisarum, the siser, or skirret)*.—The root of this plant is eatable, but now out of use, though cultivated in the time of Gerard and Parkinson. Its flavour is said to be aromatic, with a sweetness not acceptable to every palate, and of a flatulent and indigestible nature. Both the skirret root and the scorzenera of Spain possess more spicy and stimulating than nutritive qualities. Like celery, parsneps, and turnips, they are diuretic, and consequently in a slight degree stimulating. The skirret is so tender that it can scarcely bear to be boiled; hence it is mostly eaten in a crude state, like fruit; or it may be used as an excellent ingredient in soups and broths. The scorzenera, on the contrary, ought to be deprived of its black skin, and only eaten when boiled. By soaking the raw root for half an hour in cold water, it not only loses its bitter taste, but likewise is rendered less flatulent.—See *Sium*, &c.

SLEEP.—That condition of the body in which the internal and external senses are temporarily suspended, the object and design of which is, not only to renovate, during the silence and darkness of the night, the vital energies that have been exhausted during the day, but also to assist nutrition.—See *Nutrition*.

During sleep, the circulation and respiration are retarded, as well as the different secretions, consequently digestion is carried on with less rapidity. It is not well explained on what basis some authors have asserted that absorption alone acquires more activity during sleep. Since the functions of nutrition continue during sleep, it is apparent that the brain has ceased to act only with regard to muscular contraction, and as an organ of intelligence, and that it continues to influence the muscles of respiration, the heart, the arteries, the secretions and nutrition. The ordinary duration of sleep varies, in different individuals, either from habit or serenity, from six to ten hours. It is prolonged by fatigue of the muscular system, strong mental exertion, lively and multiplied sensations, habits of indolence, the immoderate use of wine, and of too strong food. Infancy and youth, whose life of relation is very active, have need of longer repose. Maturer age, more economical of time, and harassed with cares, devotes to it but a small portion of time. Very aged individuals present two very opposite modifications; either they are almost always slumbering, or their sleep is very light; but the reason of the latter condition is not to be traced to the foresight they have of their approaching end. By uninterrupted and tranquil sleep, properly limited, the corporeal and mental powers are renovated; but if it be accompanied with disagreeable dreams and unpleasant sensations, or even unduly prolonged, far from recruiting, it exhausts the strength, fatigues the organs, and not unfrequently lays the foundation of diseases, as idiotcy or mania. A question that has been often agitated is, whether it be advisable to sleep after dinner? This, however, can only be decided by a variety of concurrent circumstances, such as custom, bodily constitution, age, climate, and the like. Digestion is evidently promoted by preserving the body quiet after a meal; this we are taught by animals, particularly those of the ruminating class, which lie down after eating. Exercise ought to be taken before dinner. "Natura," says the learned Haller, "omnia animalia a pastu quiescere docuit:" but with many the dinner hour interferes with such a custom. The most easy position for effecting digestion is sitting in an easy chair, and in this posture any one, without risk or inconvenience, may freely indulge in a short sleep, after a hearty meal, should the drowsy god at such a time invite to repose, and rouse up from it with renewed vigour and cheerfulness. The horizontal posture, particularly in full habits, is rather an impediment to digestion, as the descent of the blood is somewhat retarded, and heaviness and protracted sleep is the consequence. When the stomach is weak other means are used to facilitate digestion, such as taking bitters, alkalies, water impregnated with carbonic acid gas, and the like after a meal; the use also of spices, diluting the food, or cutting it into very small pieces. Digestion is also assisted by taking small quantities of food at a time, by which precaution the excitability of the food is never exhausted—a measure more especially necessary in debilitated stomachs. But the most injurious means of all is stimulating the stomach by distilled or fermented liquors; for although such alternative may for the time being answer the purpose, it soon produces very bad effects, and greatly incommodes the stomach.

In a weak and slow state of digestion, after having taken hard or solid food, a short sleep may be indulged in, rather than after a meal consisting of much nourishment, as by its nature is easily digested. But young people of weak and delicate habits of body ought not to sleep too much, though their weakness induce them to repose; for the more they indulge in sleep the greater will be their subsequent languor and relaxation. Individuals again of a strong and healthy habit of body and who digest their food rapidly, may take gentle exercise after their meals, if they have taken food of an easily digestible nature, requiring but little assistance but that of the stomach and its fluids. And indeed, such persons, should they have taken aliment difficult of digestion, ought to remain quiet after dinner, and may occasionally allow themselves an hour's sleep, in order to support digestion.—See *Siesta*.

To the aged, emaciated, and those of an irritable habit of body, as well as to those who have spent the preceding night uneasily and sleepless, or have been otherwise fatigued, in order to restore regularity in the insensible perspiration, to rest a little after dinner may be productive of beneficial consequences and cannot possibly, while nature courts such an abstraction from the cares of the world, be attended with any inconvenient effects; though in such cases the body should be well protected from the influence of cold.

Those who give way to sleep at any time of the day are usuallymore heavy and indolent after it than before. A nap after dinner ought not to exceed an hour; half or even quarter of the time will suffice in the inclined position in an arm chair, a position the best that can be occupied by those of full plethoric habits of body; since they are less subject to a determination of blood to the head, and consequently to headach. A great deal, in fine, will depend in either case upon the manner the individual places himself in bed, as well as in the posture to which people have accustomed themselves. Lying on the back, with the arms over the head, retards the circulation of the blood to the upper extremities, and is frequently the cause of serious consequences. It is no less injurious to be in a crooked or bent posture, or with the breast very low and bent inwards; by which the intestines are compressed and obstructed in their motions, so that the blood is impeded in its circulation downwards—the consequence of which may be giddiness and even apoplexy. Lying on the back is equally as improper, and is productive of frightful dreams, as well as the invasion of those lethargic fiends, the nightmare and blue devils. The reverse position, that is, lying upon the abdomen, is likewise injurious, as in this posture the stomach is compressed, respiration impeded, and the entire circulation of the chest and abdomen retarded to the great detriment of health. The most proper posture then in bed is on one side, with the body and limbs gently curved, so that the upper parts of the fabric may be higher than the lower. When the head is placed high a short sleep is more refreshing than when it lies too low. Sleep without dreams, of whatever nature they may be, is more salutary than when attended with such fancies. Dreams, nevertheless, of an agreeable kind, promote the free circulation of the fluids, the better digestion of the food, and an efficient state of the perspiratory medium.—(See *Perspiration*). The contrary takes place in unpleasant dreams, which excite anxiety, terror, grief, fear, and other depressing passions. In the latter case, they are symptoms of irregularity in the system, of an approaching disorder, or they are occasioned by an improper posture in the bed. The functions of the body, as already observed, are obstructed by such dreams, and the animal spirits which require to be renovated and supported, are exhausted by violent emotions, insomuch that the functions both of body and mind are in a state of exhaustion rather than in one of revigoration.

To people in a good state of health it is probably of no great importance on which side they lie, and though, in this respect, they may fairly follow their own feelings, it would nevertheless be an amelioration were they to accustom themselves to alternate the position. It has been alleged by some dietetical observers, that it is better to lie in the evening on the right side, and in the morning on the left, upon the consideration that in the evening the aliment may more readily leave the stomach; and that afterwards this organ may be better warmed by the liver.—See *Digestion, Suppers, &c.*

SMALL HEMLOCK.—This has often been mistaken for parsley and has produced deleterious effects. The hemlock dropworth (*œnanthe crocata*) is also an active poison, and it has too often proved fatal by being eaten in mistake instead of water parsnep. The root of this plant is not unpleasant to the taste; it is esteemed to be the most deleterious of all the vegetables which this country produces. It is related that some French prisoners at Pembroke who had been out in the field a little before noon had partaken of this root, which they supposed to be celery, and were near being destroyed; though they all ultimately were recovered from its effects, excepting one. At Clonmel, in Ireland, eight boys, mistaking this plant for water parsnep, ate plentifully of its roots; about four or five hours afterwards the eldest boy became suddenly convulsed and died: and before the next morning four of the other boys died in a similar manner. Of the other three one was maniacal, one was maniacal several hours, another lost his hair and nails, but the third escaped unhurt. Numerous other cases are recorded both at home and abroad of fatal effects from mistaking this plant for either celery or water parsnep.

SMELL.—Smell is exerted essentially at the moment when the air traverses the nasal fossæ in proceeding towards the lungs. When the air proceeds from the lungs easily, an odour is perceived; though this may occasionally in organic diseases of the chest. The mechanism of smell is extremely simple; it being merely necessary that the odoriferous particles should be stopped upon the pituitary membrane,* particularly in places where it receives the filaments of the olfactory nerves,

* Schneiderian membrane. The mucous membrane that lines the nostrils and sinuses communicating with the nose is thus called, because it secretes the mucus of those parts, to which the ancients assigned the name of *pituita*.

which it is generally agreed is especially employed in transmitting to the brain the impressions produced by odoriferous bodies; but there is nothing to prove that the other nerves, which are placed upon the *pituitary* as well as those near it, may not concur in the same function (*Majendie*). Physiologists have not yet determined the use of the external nose in smelling; though it would appear to be intended to direct the air charged with odours towards the superior part of the nasal cavities. Persons with deformed noses, or if broken, such as have small nostrils directed forwards, have generally little or no smell. The loss of the nose, the consequence of either sickness or accident, causes almost the entire loss of smell; though this sense is recovered by the use of an artificial nose.—See *Odours*.

SMELT, (*Salmo Eperlanus*).—Smelts are allowed to be caught in the Thames on the first of November and continue till May. The Thames smelts are the best and sweetest, for two reasons; they are fresher and richer than any other you can get: they catch them much more plentifully and larger in Lancashire and Norfolk, but not so good; a great many are brought to town from Norfolk, but barely come good, as they are a fish that should always be eaten fresh; indeed all river fish should be eaten fresh, except salmon, which, unless crimped, eats better the second or third day; but all Thames fish particularly should be eaten very fresh, no fish eats so bad kept. The smelt is considered an excellent fish when fresh, and has a smell similar to that of a newly cut cucumber. When good, the scales have a fine slivery hue, and the body is very stiff; when stale it is flabby.

Smelts, and other small fish, to Cook.—Clean your smelts, gudgeons, or sprats, thoroughly in a cloth, fry them plain, or beat an egg in a plate, dip them in it, and then in very fine bread crumbs, that have been rubbed through a sieve, the smaller the fish the smaller the bread crumbs should be. Biscuit powder is still better. Fry them in plenty of clean lard or dripping; as soon as the lard boils and is still, put in the fish: when they are delicately browned they are done; this will barely occupy a couple of minutes; drain them in a hair sieve placed before the fire, turning them till they are quite dry.—See *Salmo Eperlanus*.

SMOKE-DRYING.—The art of curing animal substances by means of the smoke of a wood fire, &c.—The custom of curing hams in this manner is of very ancient date; it was well known to the Romans; and it is mentioned by Horace.

> " Fumosæ cum pede pernæ."
> Sat. ii. 2—117.

Although there are many places on the Continent celebrated for the flavour of their hams, Westphalia, nevertheless, stands foremost on the list.—(See *Hams*). The method of curing bacon and hams in this place is done as follows:—Families killing one or more hogs a year, a common practice with private individuals in this part of the world, have a closet in the garret, joining to the chimney, made smoke tight, in which they hang their hams and bacon to be gradually dried by the wood smoke alone, and not by the heat proceeding from the fire. The smoke of the fuel is conveyed into the closet by a hole in the chimney near the floor, and a place is made for an iron stopper to be thrust into the funnel of the chimney, to force the smoke through the holes into the closet. The smoke is carried off again by another hole in the funnel of the chimney, above the said stopper, almost at the cieling where it escapes. The upper hole must not be too big, since the upper hole should always be full of smoke, and that formed by wood fires; or in flues the bacon and hams may be simply placed, as we see done in various parts at home, in the vicinity of an open fire-place, where wood or turf is burnt, so as to be continually exposed to the smoke arising therefrom.—See *Dry Salting, Hams, Pyroligneous Acid.*

SMOKING. — Smoking, which may be considered as a refinement in the use of tobacco, has nearly, if not more votaries than either snuff-taking or chewing. Smoking produces a sort of temporary stupefaction, or rather delirium of an agreeable kind, in which the body and mind are involved, and brings on a languor and sleepiness, which habit renders as agreeable as rest to the weary. Smoking allays irritability for a time, and soothes the anguish of mental inquietude, which is rendered so agreeable by habit, that when once acquired is seldom relinquished for the remainder of life. The first smoking of tobacco always produces distressing symptoms — many people have destroyed themselves by it: moderate smoking is useful, it has cured the toothach, arising from inflammation of the membrane, but it is not used when the gums are much inflamed. *Tissot* and *Buchan.*

Frequent smoking, unless care be taken, turns the teeth first yellow, and afterwards black; white short clay pipes are apt to corrode them to such a degree as to infect the breath, and often to produce foul ulcers in the gums. In delicate persons, smoking, it is said, dries up the body, by producing a waste of the fluids, and vitiating the digestion and assimilation of food, as well as impairs the mental faculties, and particularly the memory — indeed, this is by no means improbable, though it happens that not ten in the hundred of delicate constitutions ever habituate themselves to smoking, and even with these, in a moderate degree, it must prove more beneficial than otherwise. It has been observed, in commendation of tobacco, that it reduces corpulence, and will render the fattest people lean. This, in some degree, we admit; but it is on the principle of spoiling digestion, that it acts thus. A gentleman, of good constitution, and fond of exercise, but who, notwithstanding all his toils, became exceedingly corpulent, was advised to *chew* tobacco, according to the directions of a person in whom he confided; and certainly he grew thin, and in time got rid of an almost lethargic drowsiness, with an unwieldy *corporation*, which had stuck to him for a considerable time: but the effect did not stop where he desired—his digestion was quite destroyed, his flesh continued to waste, he became subject to terrible bilious vomitings, and died in spite of all assistance, after having been reduced to a skeleton.

King James, independent of his "Counterblaste," as Mr. Grainger observes, professed still further his dislike to tobacco, that he was heard to say, "were he to invite the devil to a dinner, he should have three dishes: *first*, a pig; *second*, a poll of ling and mustard; and *third*, a pipe of tobacco for *digestive.*"—(*Biog. Hist. Eng.* vol. ii, p. 1).

One of our best modern poets, has also expressed a pointed dislike to the use of tobacco, but for a reason much more cogent than any of those assigned by the pedantic "British Solomon:"—

Pernicious weed! whose scent the fair annoys,
Unfriendly to society's chief joys,
Thy worst effect is banishing for hours
The sex whose presence civilizes ours:
Thou art, indeed, the drug a gard'ner wants,
To poison vermin that infest his plants;
But are we so to wit and beauty blind,
As to despise the glory of our kind,
And shew the softest minds and fairest forms,
As little mercy as the grubs and worms!

COWPER.

Tobacco, however, is not without

its able advocates. Dr. Johnson once remarked, that since the disuse of smoking among the better sort of people, suicide has been more frequent in this country than it was before. Its praises have been sung by Philips, in all his poetical productions, except "Blenheim;" and his "Splendid Shilling," says one of his biographers, owes part of its lustre to the happy introduction of a tobacco pipe. In his "Cider," may be read the following eulogium on this "sovereign herb," as he elsewhere styles it:—

"To sage experience we owe
The Indian weed unknown to ancient times;
Nature's choice gift, whose acrimonious fume
Extracts superfluous juices, and refines
The blood distemper'd from its noxious salts;
Friend to the spirits, which, with vapours bland,
It gently mitigates; companion fit
For pleasantry and wine; nor to the bards
Unfriendly, when they to the vocal shell,
Warble melodious their well-labour'd songs."

SNUFF.—Tobacco in a state of minute pulverization. The effects of tobacco, in whatever form it may be used, have been variously stated; and it is our opinion that the peculiar effects of using it in the form of snuff are the most objectionable. As the nerves of the nostrils are more exposed, or thinly covered, than in any other part of the body, they are extremely sensitive, and when snuff is applied to them, all the nervous system becomes affected by sympathy; hence snuff-taking, like tobacco-smoking, has a narcotic effect on the brain, and, through the brain on the mind itself, which particularly tends to weaken the memory. If snuff be used medicinally, that is, as a sternutatory, to promote sneezing, and on occasions requiring such a stimulant, it may be productive of some advantage, particularly where there is a congestion of pituitous humours, consequently may afford relief both to the head and eyes. If, however, the stimulus of the snuff be too violent, it may bring on so profuse a discharge from the nostrils as may relax and corrode them, and produce an incurable polypus, or a concretion of clotted blood, so as to block up the nostrils altogether. In a variety of affections of the head, eyes, and ears, the taking of snuff may occasionally supply the place of an artificial drain; though an extravagant use of it will assuredly produce a contrary effect, such as accumulations of matter in the head, bleeding of the nose, and other complaints. To those who are consumptive, who are subject to spitting of blood, or have symptoms of internal ulcers, nothing can be more prejudicial than snuff-taking. The practice infallibly vitiates the smell, consequently must impair the taste, and also blunts the hearing; for as the internal or eustachian tube of the ear opens directly behind the back part of the nostril, particles of the snuff often lodge and accumulate there to a very injurious degree. By stimulating the nerves of the eyes, also, it often brings on serious diseases of the sight; so that it appears to be hurtful to all the senses except that of touch. If taken too freely, snuff may fall into the stomach, and produce disorders of digestion; it may also occasion continual and troublesome flatulence; for when the nose is obstructed, the person must breathe chiefly by the mouth, and in this way must swallow large quantities of air, which may extend the stomach, doing much injury to the health. An elderly gentleman, some years ago, used to frequent a coffeehouse near the Exchange, who could not breathe but with his mouth open; and from whose right nostril there hung the end of a polypus, or fleshy tumour, the remainder of which filled the cavity on that side. This prevented his breathing through that nostril, and he could make very little use of the other from a similar cause. Nothing appeared externally on that side; but he was sensible of the same swelling within. His sufferings were extreme; yet to himself the greatest was, that he could no longer take snuff, to which he was accustomed. Shortly afterwards he scarcely appeared to be the same person. A surgeon of eminence had undertaken to cure him, after many had declined it; and by attacking, from within, his mouth, which could not be got at by way of the nostrils, he made a perfect cure. The greatest advantage of all was, that his long disuse of snuff, with the sense of the mischief it had done him, prevented his returning to the custom.

By excessive indulgence, the stimulus of snuff is lost; it diminishes gradually, until its excitement is no longer felt. It is now that snuff-taking may truly be called a beastly habit. The immediate effect of a pinch of snuff, in quickening the imagination, is like that of a glass of spirituous liquor to some people, in communicating cheerfulness; it is a false fire in both; it is most perceived by those who are the least accustomed to either; use wears their stimulus out; since by those who habituate themselves to snuff or drams, the one too often the inseparable companion of the other, no exhilarating effects are felt; and for the rest, all that can be said is, that both affect the brain in a sensible degree, blunt the faculties, and often terminate in a condition bordering on absolute stupidity, torpor of both body and mind, and, as it were, a lethargy of the whole system, mental and corporeal. No public speaker, teacher of languages, or professional singer, ought to abuse the use of snuff; as it evidently, when carried to an inveterate extent, injures articulation, and weakens the force and intonations of the voice, by impeding the free exit and admission of air to and from the lungs. —See *Smoking, and Tobacco.*

SODA.—Obtained by the combustion of marine plants, such as the salsola soda; the residue being dissolved, and subjected to several chemical processes, in order to separate the impurities. It is made in great abundance in Spain.

SODA POWDERS. — The following ingredients are to be divided into two separate powders as directed, and added to the water, to be drank in a state of effervescence :—*Take*

Carbonate of soda . ½ drachm
In each blue paper.
Acid of tartar . . . 25 grains
In white paper.
Water . . . . . . ½ pint.

Divide the water into two tumblers; into one put the carbonate of soda, and in the other the tartaric acid, then pour the one into the other and drink.

SODA WATER. — Made with prepared natron and acid of tartar, in the above proportions, and bottled. Used in large quantities as a cooling beverage in summer, and supposed to be beneficial in gravel and stone.

The modern custom of drinking soda water during, or immediately after dinner, has been a pregnant source of dyspepsia. By inflating the stomach at this time, those musculary contractions are counteracted which are so essential to chymification. " The quantity of soda thus introduced scarcely deserves notice; with the exception of the carbonic acid gas, it may be regarded as water, more mischievous only in consequence of the exhilarating quality inducing us to take it at a period at which we should not require the more simple fluid. "—*Paris.*

Late discoveries have shewn that the carbonic acid exists in a liquid state in soda water; when, therefore, it is hastily swallowed, it robs the stomach of a certain portion of heat, as it passes from a liquid into a gaseous state. It will therefore cool as well as distend that organ.

SOLES.—Soles are generally to be procured good from some part of the coast, as some are going out of season, and some are coming in, both at the same time. Great numbers are brought in well-boats, alive, that are caught off Dover and Folkstone, and some are brought from the same places by land carriage. The finest soles are caught off Plymouth, near the Eddystone, and all the way up the Channel, to Torbay, and frequently weigh eight or ten pounds per pair. They are usually brought by water to Portsmouth, and thence by land; but the greatest quantity are caught off Yarmouth and the Knole, and off the Forelands. They should be quite fresh, or the best cook will never make them look well.

SOLUTION.—The act of separating or dissolving. Solution takes place in the stomach, where the food is changed into a pulp, is dissolved, according to its greater or less solubility, and its nourishing particles are absolved. Assimilation only begins when the solution has already taken place in the stomach; when the nutritive substance, or the alimentary juice, is inhaled by the absorbent vessels, and conducted to the blood by means of the lacteals. Assimilation, therefore, is that function, by which the aliment is, as it were, assimilized: hence it has been conjectured that animal food is sooner digested than vegetable, as being more easily converted into animal fluids, and more an'alagous to our nature.

The subject relative to the solubility of animal food, requires less our consideration than has hitherto been imagined, notwithstanding the differences between animal food so called, the first of which regards their solubility, as depending on a lax or firm texture of their different kinds, for which there are instances of persons of a weak and delicate stomach being incapable of breaking down the texture of vegetables, or even of dissolving a light pudding, to whom hung beef or a piece of ham are not only very grateful, but easy of digestion. None of the theories given for the solution of animal food in the human stomach seem to have sufficiently explained this process.—(See *Digestion*). There is a difference of solubility with respect to the manducation of animal food, for which bread is extremely necessary, in order to keep the more slippery parts in the mouth till they be properly comminuted.—See *Manducation, &c.*

Our rejection of the firmer parts of animal food, such as bull beef and carnivorous animals generally, may be adduced as another proof of our regard to solubility, the effects of which seem also to be the base of our choice between fat and lean, young and old meat. In the lean, although perhaps a single fibre might be sufficiently tender, yet these when collected in *fasciculi*, or bands, are very firm and compact, and of difficult solution; whereas in the fat there is a greater number of vessels—a greater quantity of juice, and more interposition of cellular substance, consequently, more solubility. Again, in young animals, there is, probably, the same number of fibres as in the older, but in the latter they are more connected; whereas, in the older, the growth of the fibre depending on the separation, and the increase of vessels and cellular substance, the texture is less firm and more soluble, qualities which, with regard to the stomach, are at that time too much increased by the alkalescency of the animal. To these causes may also be attributed our preference for castrated animals, namely, from their disposition to fatten after the operation. (See *Alkalescency*). We choose between meats recently killed, and those that have been kept for some time after, merely with a view to the facility with which the latter, sooner than the former, is dissolved in the stomach. The putrefactive process begins as soon as meat is killed, which is commonly allowed to proceed a little, as this process is the most effectual breaker down of animal matters, as well as a great assistant in solution.

The length of time that meat ought to be kept after it is killed will depend upon its tendency to undergo the putrid fermentation, and the degree of those circumstances which are inclined to favour it. For instance, in warm climates, where meat will not keep above four or five hours, it is used in a more recent state than in colder countries.

Boiled or roasted meats create a difference in the facility with which solution is effected. By boiling, the juices interposed between the fibres are extracted; the fibres are approximated closer to each other, and rendered more difficult of solution, a circumstance, too, which is increased by the juices, which are much more *alkalescent* than the fibres, (see *Cookery*). But when it is wished to avoid the stimulus of alkalescent food, and the quick solution of it, as in some cases of disease, the roasted should not be selected.

Of roasted meats, the question may be asked, which is the most proper; those which are most or least done? To this we would reply, that that which is least done is certainly the most soluble. Even raw meats are more soluble than dressed; at least, Dr. Cullen was made acquainted with this circumstance, by a person who, from necessity, was obliged for some time to live upon it in this state. Still, at the same time that meats little done are very soluble, they are very alkalescent, so that when alkalescency is to be avoided in the alimentary canal, the meats most roasted should be preferred. Those who throw away the liquor of boiled meats do very wrong, for, independent of its furnishing a fluid of a nutritious quality, it increases, from its greater alkalescency, the solubility of the meat.

Pure blood has been thought insoluble. It is, undoubtedly, very nutritious: and though, out of the body, like the albumen of eggs, it seems very insoluble; yet, like that too, in the body, it is commonly very easily digested. Moses very properly forbade it to the Israelites, as in warm countries it is highly alkalescent, and even in cold climates, when it was used in great quantities, the scurvy was more prevalent; but to a moderate use of it in European climates, no particular objections are alleged. Viscidity of the alimentary juice is another variety of solubility. For this reason, the meat of young animals appears more soluble than that of old, not only on account of its greater compactness and firmness of texture, but also from the greater viscidity of its juice. In proof of this assertion, nothing is more common than to be longer oppressed from a full meal of veal, than from an equal quantity of beef. Owing also to the greater viscidity of the juice of young animals, the tendinous and ligamentous parts are longer retained in the stomach than such as are purely muscular. Fishes, whose muscular parts are exceedingly tender, are, from their glutinous and viscous nature, longer in being dissolved. Eggs, in like manner, which are exceedingly nutritious, have the same property, and cannot, on this account, be taken in great quantities, in consequence of the stomach being peculiarly sensible to gelatinous substances; on which account nature, probably, has taught us, by a sort of instinct as it were, to limit ourselves in the use of these nutritive substances. With respect to solution, the oils of animal food must be taken into the account. These, when tolerably pure, are the least putrescent part of it, and, by diminishing the cohesion of the fibres, render them more soluble. On this account, the lean of fat meat is more easily dissolved than other lean. But by exposure to much heat, the oil is separated from the meat, leaving the solid parts less soluble, becoming itself empyreumatic, rancid, and of difficult assimilation in the stomach. Fried meats, for the preceding reasons, as well as baked meats, from the adhesiveness of the paste, are preparations which lessen the solubility of the food. From this it appears that the preparation of food, by fattening and keeping it for some time previous to killing, although it may promote a disposition to gormandize, will nevertheless increase its disposition to solution.

SORB APPLE. (*Sorba*, from *sorbere*, to swallow, because this fruit, says Lemery, when ripe, is soft and easy to swallow).—The service tree, *sorbus domestica.* Fruit rough, very astringent, even when softened. Sorb apples do not ripen upon the trees, as other fruits do; they are gathered in autumn and spread upon straw, where, after they have lain for some time, their consistence is very much altered, so that from being hard, bitter, and unpleasant, they become soft, sweet, and delicious. Those that are large, full ripe, well tasted, and of an agreeable smell, ought to be selected. The extracted juice of the sorb apple ferments, and becomes vinous, like perry. They agree in the winter with young bilious people, and those who have weak stomachs, provided they be used in moderation. The berries of the wild service tree (*sorbus aucuparia*) are astringent, and it is said they have been found serviceable in allaying the pain of calculous affections of the kidneys.

SORBIC ACID.—Obtained from the berries of the mountain ash (*Fraxinus Sylvestris*). The acid of apples, called malic, may be obtained most conveniently, and in greatest purity, from this source. This was supposed by Donovan and Vauquelin, who wrote good dissertations upon it, to be a new and peculiar acid; though it now appears that the sorbic and pure malic acids are the same. Bruise the ripe berries in a mortar, and then squeeze them in a linen bag. They yield nearly half their weight of juice, of the specific gravity of 1.077. This viscid juice, by remaining about a fortnight in a warm temperature, experiences the vinous fermentation, and would yield a portion of alcohol. By this change it becomes bright, clear, and passes easily through the filter, while the sorbic acid itself is not altered.

SORREL. (*Rumex acetosa*).—Sorrel possesses an acrid acidity, which deprives the teeth of their enamel, and ought to be avoided by those who are already troubled with an acid taste in the mouth. Boiling renders it bland, and deprives it of its sour acrid taste.

SOY.—The seeds of the *Dolichos soya:* peas or kidney beans are frequently substituted for them. A highly flavoured and agreeable sauce, used with fish, and in the composition of other sauces, (see *Sauces*). It is made as follows:—

Seeds of dolichos soya (peas or kidney beans may be used for them) one gallon; boil till soft; then add bruised wheat, one gallon; set them by in a warm place for twenty-four hours, and afterwards add common salt, one gallon; water, two gallons. Put the whole in a stone jar, and bung it up for two or three months, shaking it very frequently; press out the liquor: the residuum may be treated afresh with water and salt, for soy of an inferior quality.

2. Strong purl boiled down to one half; add red herring, anchovies, Spanish liquorice, and garlick: when shaken it should leave a yellow brown colour on the sides of the vessel.

SPANISH WINES.—The principal Spanish wines are Sherry, Pacaretta, Mountain, and Tent. Sherry is a sort of *sec*, or dry wine, prepared about Xeres, in the diocese of Seville; and hence called, according to our orthography, Sherris or Sherry. (See *Sack, and Sherry*). The wines most remarkable in Cadiz are Sherry and Pacaretta, both from Xeres and its vicinity. In the district of Malaga there are 14,000 vine-presses, chiefly employed in making the rich wines, which, if white, from the nature of the country, are called *Mountain;* if red, from the colour, *vino tinto,* known to us by the name of *Tent.* The wine of La Mancha appeared to Mr. Townsend to be the best in Spain; it had, he says, the flavour of the richest Burgundy, and the strength and body of the most generous Port.—See his *Journey,* vol. ii. p. 263; vol. iii. p. 29.

SPERMACETI. — An unctuous fatty substance, found in the head of some species of whales (*acipenser macrocephalus*), and is generally mixed with oil, from which it is purified by alkaline ley. In a pure state it has no smell, and very little taste; it turns rancid by keeping. Mixed with the yolk of an egg or gum arabic, it forms an useful emulsion in coughs, colds, and stranguary from the use of cantharides. It is also useful in dysentery and ulcerations of the intestines, and particularly catarrh, slight inflammation of the lungs, dry cough, want of expectoration, and shortness of breath:—*e. g.*

Take spermaceti	.	2 scruples.
Yolk of egg	.	quant. suff.
Syr. of Tolu.		
C. Spirit of vitriolated ether	.	10 drops.
Distilled water		$1\frac{1}{2}$ ounce.

Make a draught, to be taken every four hours; in *Asthma, Dry Coughs, &c.*

Spermaceti ointment is softening and emollient to abraded surfaces, and is the proper drawing to a blister of Spanish flies. It is also a component part of most pastes and cosmetics, from its softening the skin and rendering it smooth.

SPERMACETI OIL. — The oil of a particular species of whale (see *Spermaceti*), found in a large trunk four or five feet deep, and ten or twelve long, filling almost the whole cavity of the head, and seeming to supply the office of cerebrum and cerebellum. The oil drawn from the other parts of the same fish is nearly three times the value of the common black whale oil. It is used for chamber lamps; the common whale or train oil, as well as that of some other fish, is used for street lamps and other purposes.

SPICES.—Spices, of themselves, are not nourishing, but are used merely to improve the taste and flavour of substances, to prevent flatulency, and promote digestion. Some spices are extremely volatile, and occasioning too strong a stimulus do more harm than good. As they are apt to heat the blood, to increase perspiration, occasionally to affect the head, and to stimulate the nerves, spices in general should be used only by persons of a strong constitution, or by those of a lax fibre and cold phlegmatic habit: but individuals naturally lean and dry, as well as the choleric and phlegmatic, ought to be sparing and cautious in the use of heating drugs. The most conducive to health would be the indigenous spices, though some of the foreign kind have now become indispensable in our present mode of living.—See *Condiments.* Also,

Cardamons.	Pepper.
Caraway.	Pimento.
Cinnamon.	Salt.
Cloves.	Sugar.
Cubebs.	Vanilla.
Ginger.	Vinegar, &c.
Nutmegs, &c.	

SPIKENARD.—An odoriferous plant, abounding in the island of Java and other parts of the East Indies. Its ointment was in high estimation among the ancients. The Evangelist Mark (chap. xiv. ver. 3) relates, that while our Saviour sat at table in the house of Simon, the leper, in Bethany, a village near

Jerusalem, a woman entered with an alabaster pot of this ointment, which having broken, she poured the contents on his head.

SPINAGE.—Spinage is a favourite dish with many, affords but little nutriment, passes quickly through the stomach and bowels, almost indigested; and being usually dressed with butter, it weakens the alimentary canal, produces looseness, and consequently is not proper food for weakly constitutions. In languid stomachs spinage is apt to produce acidity and the heart-burn. Spinage was formerly not eaten in salads; and the oftener now in a crude state it is left out, the better; and the wild succory with the narrow dark leaf, seasoned a little with sugar and vinegar, is eaten by some in summer, though it is more grateful to the stomach than the palate. Those that are tender, soft, juicy, well cultivated, and that grow in a fat soil are to be selected. It agrees at all times with young people of a hot and bilious constitution.

SPIRIT, (*Spiritus*).—A name formerly given to all volatile substances collected by distillation.—Three principal kinds were distinguished: inflammable or ardent spirits, and alkaline spirits. The word spirit is now almost confined to alcohol.—See *Alcohol.*

SPIRIT OF WINE.—All spirit one to twenty overproof is thus deemed in the English laws: the London College and that of Edinburgh, order it for medicinal use to have the specific gravity of 835, but the Dublin only 849.

2. Molasses spirit, thirty gallons kali puri. 6 lbs.; draw twenty-five gallons, add faints of spirit of wine, five gallons kali puri. 6 lb., draw twenty gallons rectified spirit, and five gallons faints.

SPIRIT, PROOF.—Differs from the raw spirits above described, although of the same strength, by being always formed of spirit of wine diluted with water. The London College mentions no proportion, but requires the spec. grav. of 930; the Dublin advises the mixture of four measures of rectified spirit with three of water; and the Edinburgh orders equal measures of their alcohol and water, the spec. grav. of which mixture they quote as 935. The chemists in London are in the habit of making their proof spirit by taking half spirit pint of wine and half water, whenever it is required, as they seldom or never keep it in that state.

SPIRIT, FROM FAINTS.—In rectifying spirits, and in distilling compound spirits after the first strong portion has been drawn off, the weaker, and in some cases discoloured spirit that arises, is saved, as long as it will take fire when thrown on the still-head, by a candle or lighted paper, under the name of faints, and when a sufficient quantity has been collected, it is rectified: the spirit thus obtained is principally used to make anise-seed cordial, as the strong flavour of the anise seed will overpower any other flavour the spirit may have acquired.

The various degrees of strength of spirituous liquors, were technically denominated by numbers, referring to an arbitrary strength, called in the English law, proof spirit, a gallon of which weighs 7 lbs. 11 ounces, 3 drachms, avoirdupois. When spirit is said to be one to three overproof, it is meant that one gallon of water added to three gallons of the spirit, will reduce it to proof; on the contrary, one in three under proof, signifies that in three gallons of that spirit there is contained one gallon of water, and the remaining two gallons are proof spirit. As a gallon of water weighs by law 8 lbs. 7 ounces, 5 drachms, avoirdupois, the specific gravity of proof spirit is to that of water, as 910 to 1000. Of late by a new regulation of the excise laws, the use of a hydrometer is introduced, which shews the number of hundred parts of spirit that any liquors contain above proof, or their deficiency below proof.—See *Molasses Spirit*, *Rum*.—See also *Malt Spirit*.

SPRATS. (*Clupea Sprattus*).—Belly fin nine rayed; flesh dry. Headed, gutted, and pickled in vinegar, used for anchovies.—(See *Anchovies*). Salted in brine and not gutted; retailed at 1d. per pound—about fifty fish.

SPRAT POWDER.—Head and gut the sprats, float them over with vinegar, add a little suet and allspice, bake for two hours, rub them through a hair sieve, and proceed as in making anchovy powder. Sprats made into paste with dried flour, roll out thin, dry, and reduce to a fine powder.

SPROUTS AND PITHS.—EDIBLE.

Bamboo Cane,
Black Cauliflower,
Cabbage Tree,
Cauliflower,
Common Cabbage,
——— Turnip,
Early Battersea Cabbage,
Green Savoy Cabbage,
Golden Purslane, broad leaved,
Paper Rush,
Siberian Brocoli,
Sago Palm Tree,
Red Berry,
Rough Pinewood.

N. B.—Some of these may be consulted under their respective heads.

SPRUCE.—Spruce beer is a kind of diet-drink, made by infusion or coction of the leaves and small branches of the black and white spruce fir, and reckoned antiscorbutic, and a purifier of the blood. It is much drank in America; and at present considerable quantities are consumed in England. Arbuthnot considered it a good balsamic in some internal disorders.

Spruce Beer, *White*, *to make*.—To ten gallons of water add six pounds of the essence of spruce; add yeast,

^ of molasses & Somcers

and work as in making ginger beer. Bottle immediately, in half pints.

BROWN SPRUCE.—As the white, using treacle instead of sugar.

Spruce Beer Powders. — White sugar, one drachm, two scruples; ginger, five grains; natron, prepared, twenty-six grains; essence of spruce, ten grains; in each blue paper. Acid of tartar, half a drachm in each white paper, for half a pint of water.

STAG.—See *Venison*.

STALKS, AND SHOOTS.—EDIBLE.

Angelica,
Asparagus,
Burdock,
Black Bryom,
Chardoon,
Common Alexander,
Cotton Thistle,
English Mercury,
Garden Celery,
Greater Syrian Dog's Bean,
Milk Thistle,
Mountain Sow Thistle,
Purple Goatsbeard,
Rhapontic Rhubarb,
Rosebay Willow Herb,
Sea Bindweed,
Spatling Poppy,
Siberian Nodding Crocus,
Smallage,
Sweet Azorian Fennel,
Sugar Cane,
Thracian Bell Flower,
Wild Hops,
Yellow Goatsbeard.

N. B.—Many of these may be consulted under their respective heads.

STARCH, (*Amidine*).—Starch exists abundantly in the vegetable kingdom, and is one of the principal ingredients of most varieties of grain, of some roots, such as the potatoe, and the kernels of leguminous plants.

The *Indian arrow-root*, prepared from the root of the *Maranta arundinacea*, has all the characters of pure starch. *Sago*, obtained from the pith of an East Indian palm tree (*Cycas circinalis*), and *tapioca*, from the root of the *Jatropha manihot* (*casada*), are chemically the same substance. They both exist in the plants from which they are extracted, in the form of starch, but as heat is employed in their preparation, the starch is more or less completely converted into *amidine*. Salop, when obtained from the *Orchis mascula*, consists almost entirely of the substance called *bassorin*, with a small quantity of gum and starch.

STARCH, COMMON.— Starch mixed with powder blue, to give a bluish tinge to the linen, which is stiffened with its solution in boiling water; this colour being given to it, in opposition to the yellow starch, tinged with saffron or turmeric, formerly employed, but which went out of fashion on the execution of the famous midwife, Mrs. Turner, who was hanged in a ruff of that colour: used as a cement, but unfit for internal use.

STARCH, POTATOE.—May be made from frozen potatoes, in as large a quantity, and as good, as from those which have not been spoiled by the frost, very white, crimp to the fingers, and colours them, friable, heavy, sinking in water; when held towards the light it has shining particles in it; dissolves in boiling water as easily as true arrow-root. One hundred pounds of potatoes yield ten pounds of starch.

STARCH, WHEAT.—From wheat flour, by washing it in sacks in a current of water, which carries off the starch and saccharine substance, and leaves the gluten in the sacks. The water being received in troughs, is left to ferment, which decomposing the saccharine substance, renders the starch that is deposited on standing, very pure and white; this starch is friable, easily pulverised, crimps between the fingers, without smell or taste. Wheat in France yielded almost three-fourths its weight, but in Sweden not quite half its weight; does this depend upon climate? Demulcent, perhaps astringent; used for glysters in diarrhœa, dysentery, &c.

STARLING.—A well known bird, about the size of a blackbird. Its flesh is nourishing, and yields good and solid food. The leaner a starling is, the older the bird grows, the harder and tougher the flesh; the taste degenerates, and it is not so easily digested. This bird is naturally of a hot and dry temperament, and when not young and fat it ought not to be eaten. During the vintage season, the starling is observed to be fatter, more delicious, and better tasted, than at any other time. Galen (*Sanitat. lucend.* lib. vi.) places the starling in the list of attenuating foods, and that has a good juice; which can only be applied to that which is young, fed with good food, and lives on the mountains.

STEARINE.—The chief ingredient of suet, butter, and lard, and is the cause of their solidity; whereas oils contain a greater proportional quantity of elaine, and are consequently fluid. These principles may be separated from each other by exposing fixed oil to a low temperature, and pressing it when congealed between two folds of bibulous paper. The stearine is thus obtained in a separate form; and by pressing the bibulous paper under water an oily matter is procured, which is elaine in a state of purity. This principle is peculiarly fitted for greasing the wheels of watches or other delicate machinery, as it does not thicken or become rancid by exposure to the air, and requires a cold of about 20° F. from congelation. — See *Oils, Animal.*

STEWING.—The process of stewing differs from roasting and broiling, by the heat being applied to the substance through a small portion of a liquid medium; and from boiling and frying, in its being conducted by means of a watery, instead of an oily menstruum. It is requisite, during this culinary process, that the fire should be moderate, for a strong heat suddenly applied would be very injurious. The liquids employed as the medium for applying the heat are usually water, gravy, or broth, the quantity of which must be such as shall prevent the meat from burning and adhering to the pan. It is not requisite that the liquid be made to boil in stewing. It should only be raised nearly to a simmering heat, which will retard the fluid being evaporated too quickly. The closeness of the vessel will also prevent the waste of the liquid. If it diminish too quickly, it must, from time to time, be replenished.

The management of the fire in cooking, is, in all cases, a matter of importance, but in no case is it so necessary to be attended to as in preparing stews or made dishes; not only the palatableness, but even the strength or richness of all made dishes seem to depend very much upon the management of the heat employed in cooking them.

The most proper sorts of animal food for stewing are such as abound in fibrine, and which are too dry or too tough for roasting. When beef or mutton is rather old and too coarse flavoured, and not tender enough for the spit or the gridiron, it may, by stewing, be not only rendered tolerably palatable, but even sometimes savoury and good. But the stewing process is not confined to flesh of this sort; for veal and other young flesh which abounds in gelatine, when properly stewed, is much relished. The vegetables most usually stewed are carrots, turnips, potatoes, pease, beans, and other leguminous seeds. Some fruits are also cooked in this way.

Rationale. — Stewing is nothing else than boiling by means of a small quantity of an aqueous fluid, and continuing the operation for a long time, to render the substance tender, to loosen its texture, to render it more sapid, and to retain and concentrate the most essential parts of animal or vegetable food.

If the stew-pan be close shut, it is evident that none of the nutritive principles can escape, and must either be found in the meat itself or in the liquid. The water or gravy in which the meat is stewed, being capable of dissolving the gelatine and albumen, the greater part of them become separated during the simmering process. Now, since the firm texture of the bundles of fibres of the meat is owing to the solid gelatine and albumen glueing them, as it were, together, when they are dissolved and disengaged, the meat must become greatly disorganized. These principles, as well as the fat and osmazome, are partly disengaged from the meat, and become united with the gravy. It is to these, indeed, that the gravy owes all its richness and excellence. The muscular fibres and the tendons acquire a gluey appearance and texture, and the whole forms a savoury gelatinous *stew*, *gravy*, or *soup*. No scorching or browning of the meat takes place if the process is properly conducted; for the temperature to which it is exposed does not exceed the boiling point of water. In the stewing of vegetables, saccharine matter is formed, the starch and mucilage are rendered soluble, and, of course, set free the woody fibre, which either floats through the liquid, or adheres together very slightly. It accordingly constitutes either a pasty fluid, or converts the vegetables to a soft pulp; sometimes their original shape being preserved entire, and at other times not. Stews are very easy of digestion when they are very plain, in which case, they fall short, in point of nourishment, of meat that is broiled or roasted. Their best properties, however, are frequently deteriorated or injured by too high seasoning, and the addition of stimulants and indigestible compounds, many of them much more calculated to derange the functions of the stomach than to afford nourishment.

STOMACH.—The human stomach, the viscus or bowel in which digestion is performed, resembles, as much as any thing we know, the paunch, if it may be so termed, of a pair of bag-pipes. It is situated on the left side of the diaphragm or midriff. The mouth communicates directly with the stomach, by means of the long and narrow membranes and a muscular canal, called the œsophagus or gullet, which in many animals is so capable of being dilated as to enable them to swallow animals much larger than themselves. The stomach of an adult is capable of containing upwards of three quarts of water, and has two openings; the superior or upper one, connected with the gullet, is called the pylorus or pyloric opening; the inferior is termed the cardia or cardiac opening, which descends somewhat into the cavity of the duodenum, or first small intestine.—See *Alimentary Canal.*

The situation of the stomach varies in respect to its state of fullness or emptiness. It is amply furnished with nerves from each nervous system, a circumstance to which its great sensibility is traced, and also from which it is so readily affected by all kind of stimuli, whether external as cold, or internal, as food and its own fluids; or mental; whence also the great and surprising sympathy between it and most of the other natural functions, to which may be referred the influence of all the passions of the mind, as well as the reaction of the healthy condition of the stomach upon the tranquillity, which follows, of the mind. The abundance and utility of the blood vessels of the stomach are no less remarkable. Its arteries ramifying infinitely upon the cellular membrane, secreting the gastric juice, which appears to be continually streaming from this organ.—(See *Gastric Juice*). In carnivorous animals, which swallow voraciously; for instance, the wolf, the stomach is very large; but in many of the herbivorous kind it is of considerable size; and particularly in such as ruminate, its muscular fibres are proportionably stronger, and capable of voluntary motion. The process of rumination implies a power of voluntary motion in the œsophagus; and indeed the influence of the will throughout the whole operation is incontestable. Rumination is not confined to any particular time; since the animal can delay it, according to circumstances, till the paunch is quite full. In the occasional examples of the power of rumination in man, the operation is also found to be quite voluntary. The opening of the gullet into the stomach is marked by some differences, both with regard to its size and mode of termination—circumstances which explain why some animals, as the dog, vomit very easily; while others, as the horse, are scarcely susceptible of this operation: which, in the latter, is also partly hindered from taking place through the mouth, by the complete manner in which this cavity admits of being separated from the gullet, by the thin membrane (*velum palati*) of the palate.—*Blumenbach's Comp. Anat.* p. 82—87. Second edition.

In its substance, the stomach consists of three principal coats or layers, the external and internal of which are membranous, and the middle muscular. The internal coat, moreover, is lined with a villous or downy apparatus, and is extremely convoluted or wrinkled; the wrinkles increasing in size as the diameter of the stomach contracts. "There was a time when persons thought the wrinkles in the internal coat of the stomach, rubbing against each other, produced hunger; hence the vulgar phrase, 'Come, take the wrinkles out of your stomach,' by satisfying the appetite: but all that is mere nonsense."—*Abernethy*.

As regards the physiology or functions of the stomach, the late John Hunter was the first man who broached those opinions which are generally accredited, or have not, till very lately, been disputed, which is, that digestion depends upon the sufficient quantity of the liquid which the stomach secretes of the gastric juice, and that this liquor has the property of rendering any nutritive matter solid, so that it should not pass through the *pylorus* until it had undergone the solution by the gastric fluid. If the white of an egg be given to a hungry dog, in a few minutes it will be as hard as if it had been boiled for hours. The juice of the stomach instantly curdles milk. Take the gastric juice out of the stomach of a calf just born, and it has most curious properties; the little there is of that liquid they dry, then dissolve it, and then curdle gallons of milk with it. Then as the fluid of the stomach has the power of dissolving that which is nutritive, the question is, why does it not dissolve itself, it is flesh? But it is the life of the stomach that preserves it from this action. There is no chemical agent will act upon it. Worms live in the stomach, and yet there is no doubt but that a meal of dead worms would form a very nutritive repast for a dog. But does the gastric fluid ever dissolve the stomach in which it is secreted? We are told it does: for instance, if a man eat a hearty meal, and is suddenly afterwards killed by a blow on the head, as has often occurred, it will be observed that the gastric fluid is acting not on the food, but on the stomach; that it makes a hole in the stomach, and that food gets through that hole into the belly. Various stomachs have been examined after death, having these appearances. — See *Gastric Juice*, *Indigestion*.

STOMACH, DERANGED.—The bad effects that may arise from an accumulation of noxious matter in the stomach and the first passages, are to be obviated, generally, by the prudent administration of emetics and purgatives, abstaining at the same time from aliment likely to produce them. For example, crude vegetables, milk, butter, and other oily substances, are to be avoided by persons troubled with sourness in the stomach; brisk exercise, especially riding on horse-back, is to be used; and abstinence from all fermented liquors. Their common drink should be pure water, or water with a little rum or brandy in it. The Seltzer or Pyrmont waters are to be drunk medicinally; and aromatic bitters, infusions, or tinctures, acidulated with sulphuric acid, to strengthen the fibres of the stomach, and promote the expulsion of its contents, after they have been sufficiently long retained, *e. g.*

Take	Wine of iron .	. 1 oz.
	Infusion of gentian	. 6 oz.
	Tincture of cascarilla	4 drs.

Make a mixture, and take two table spoonsful twice or three times a day; preceded by some antacid aperient medicine.—See *Antacids*.

In order to procure relief, magnesia or prepared chalk may be used, made into lozenges with a little sugar and mucilage; and in this form may be conveniently carried about in the pocket, and taken occasionally by persons troubled with heartburn, and acidities in the stomach.—(See *Heartburn*). In persons where there is a redundance and stagnation of bile, and an unpleasant bitterness in the mouth, the bowels should be kept freely open by taking occasionally small doses (from five to fifteen grains) of pure aloes, castor oil, cream of tartar, and the like. When there is a tendency to empyreumatic rancid accumulation in the stomach, all the various kinds of oily and high seasoned articles of diet, generally termed made-dishes (which see) are to be avoided; eating sparingly of plain meat, without rich sauces or much gravy—in which cases the most proper drink is pure water or toast water.

STOMACH, REGULATION OF.—It has been well observed that "temperance is the best physic:" although the ancient physicians did not hesitate to recommend occasional indulgence, and allowed people to exceed both in eating and drinking; but it is safer, if there be any safety in danger, to go to excess in drinking than in eating; inasmuch that in the former, should the debauch cause any extraordinary or distressing degree of pain or sickness, and should a temporary fever ensue, it may for the most part be shaken off, either by lying in bed and encouraging perspiration; or getting on horseback and using brisk exercise, to restore the body to its natural state. Should a person overload his stomach, that is, go to excess in eating, especially in high seasoned things, with rich sauces, a draught of cold water acidulated with lemon juice or sulphuric acid, will take off the sense of weight at the stomach, and assist the digestive process by moderating and keeping within bounds the alimentary fermentation, thus preventing the generation of too much air. The luxury of ices may be of real service at the tables of the great, for producing similar effects to the acidulated cold water. Persons under these circumstances should not lay themselves down to sleep, but, on the contrary, keep up and use moderate exercise until they feel sensible of the stomach being unloaded, and that they no longer experience any oppressive weight in that bowel. The stomach should always be allowed time to empty itself before it is filled it again. From necessity a man may be obliged to fast, he ought, if possible, during that time, to avoid laborious work. After suffering from extreme hunger, people should not at once gorge or fill themselves; nor is it proper after being once filled, to enjoin an absolute fast: neither is it safe to indulge in a state of total rest immediately after excessive labour; nor suddenly to fall to work after having been long without motion: in a word, all changes should be gradually made; for though the constitution of the human body be such that it can bear many alterations and irregularities without much danger, yet, wherever the transitions are extremely sudden, there is a great risk of producing some degree of disorder.

The most obvious operation of bitters is, that being taken into the stomach they increase the appetite for food, and promote digestion of it: but let it be taken for granted that these functions depend upon the tone of the muscular fibres of the stomach; and therefore we may suppose that the improvements of these functions depend upon an increase of tone in these fibres. And farther, as loss of appetite and indigestion can often be distinctly perceived to occur from a loss of tone in the stomach; so bitters, as they are often effectual in curing these disorders, may be presumed to do it by restoring the tone of this organ. The medicinal part of bitters of every kind may be extracted either by watery or spirituous menstrua; and such extractions may contain the virtues of the substance from which they have been taken; though probably never to the same extent; consequently the bitter in substance in certain cases is the only effectual mode of exhibiting it. There are cases, however, where the stomach will not bear either the bark or bitters in substance, and therefore it becomes necessary to obtain these virtues in a liquid form; in the management of which there are several particulars that demand attention. By infusion in hot water, and even in cold water, bitters give out their virtues; though with this temperature of the menstruum they never yield a strong impregnation, though generally it is the most agreeable to the palate and stomach. Warm water, though under the boiling heat, extracts more powerfully than cold, and the more as the temperature of the water is increased. With respect to every temperature, this is especially to be attended to, that by infusion bitters suffer a gradual decomposition, and consequently the matter extracted is different according to the length of time that the menstruum has been applied; so that the temperature being given, whatever is extracted in the first hour is lighter and more agreeable matter than what is extracted after many hours' infusion. And as regards tinctures made with a proof spirit, the same things are to be observed as of those made with water, that there is a gradual decomposition of the substance, and therefore that the tinctures made by a short infusion are more agreeable than those that have stood longer.

STOMACHICS. — Medicines to fortify the stomach and system generally. Among the principal of these may be classed the tonic bitters—various kinds of wine, some of the preparations of iron, carminatives, &c. *e. g.*—See *Tonics.*

* Calumba.
* Chamomile.
Augustura Bark.
Bark, Peruvian.
* Gentian.
* Rhubarb.
* Orange and lemon peel.
Essential oil of juniper.
Plaster of labdanum, &c.

(*Those* marked thus, may be consulted under their respective heads.*)

STOMACH-PUMP.—A stomach syringe or instrument for diluting and washing away various poisons taken into the stomach, either by accident or design, was first suggested by Boerhaave; since revived by Renault in his work on poisons. Dr. Monro afterwards gave drawings of instruments for the removal of laudanum from the stomach.—(*Thesis de Dysphagia.* Edinb. 1797). But until Dr. Physic (see *Eclectic Repertory*, vol. iii. p. 111) proved the utility of the stomach-pump in the case of a child poisoned with laudanum, the invention gained little attention. The stomach-pump as now perfected, appears to be admirably adapted to the joint object of enlarging the gullet by gradual dilatation, and of conveying any quantity of food that may be desirable. The instrument, as regards its structure, consists of an elastic gum tube, a quarter of an inch in diameter, and two feet and a half in length, terminating in the lower extremity, or that introduced into the stomach, in a small globe of ivory with various perforations, which for the present purpose must be omitted, and filled at the upper end either by a screw or a plug, to an elastic bottle of sufficient size to contain at least a quart of liquid, with a stop cock fitted to it, as in what is called the hydrocele bottle. Instead of the bottle, a pewter syringe may be adapted, of equal capacity, and used in the same manner. The bottle or syringe being filled with warm water, and fitted to the tube already introduced into the stomach by the mouth or a nostril, on turning the stop-cock the water or other liquid may be easily forced into the stomach, and withdrawn by a reverse action: and hence, laudanum or any other deleterious ingredient capable of dilution, may be pumped up in a diluted state till the stomach is entirely unloaded; and liquid food to any extent, may be introduced at option.

STRAWBERRY, (*Fragaria*).—Like grapes, strawberries are resolvent and laxative without debilitating. If eaten plentifully, they have been found a safe preventive against the gravel, as stands attested by the experience of the celebrated Linnæus.

Yet the small stones contained in strawberries, as well as in grapes, are said to accumulate in the intestines of some individuals, and to give rise to the most obstinate constipations, nay even to the iliac passion (violent colic, terminating in an inversion of the peristaltic motion). The best method of eating strawberries is with pure water, and sweetened with a little sugar; they are more heating with wine, but less wholesome; with milk or cream they are an agreeable but improper composition. As a medicine, the wild strawberry is far preferable to any other. A pleasant drink is made of strawberries, water, and sugar, which is much used as a cooling and refreshing beverage in summer, to quench thirst. They agree well with young people of a sanguine and choleric complexion, and are not injurious unless taken in too great a quantity at a time.

STURGEON.—A large fish living both in the sea and fresh water. It has an excellent taste; it grows fat in the rivers, and becomes more delicious than if it had lived in the sea. It usually weighs about a hundred pounds, and doubles this. It is a strong and vigorous fish; but as it has no teeth, it can only feed on the filth and froth of the sea. It is very rare in France. It is usually pickled in those places where it is caught in great plenty, and exported. The belly is reckoned the best part of the fish. It was much esteemed by the ancient Romans; it is a nourishing and solid food, rather difficult of digestion, and apt to derange the stomach; but if moderately used by strong and hale young people, with good stomachs and who use exercise, it always agrees well.—See *Fish.*

SUBSTANCES, INDIGESTIBLE.—Many substances are so hard and intractable as to resist the action of the digestive organs, without undergoing any other change than that of being softened or otherwise partially altered, instead of being entirely subacted, and reduced to chyme or chyle. Such in particular are the seeds of plants; and it is well worthy of observation, though hitherto it has been overlooked by physiologists, that, while birds or other animals derive from this kind of food a very valuable nutriment, notwithstanding that it passes through them without being completely digested, the seeds themselves thus acted upon derive also a reciprocal benefit in many instances; and are by that means rendered more easily capable of expanding the soil into which they are afterwards thrown as by accident, and have their productive power very greatly increased. The olive tree, till of late years, has only been raised in the south of France by cuttings, or wild plants obtained from the woods. It was remarked by an attentive inhabitant of Marseilles, that when produced naturally, it is by means of kernels carried into the woods, and sown there by birds which had swallowed the olives. By the act of digestion, it was further observed, these olives are deprived of their natural oil, and hence the kernels become permeable to the moisture of the earth; the dung of the bird at the same time serving for manure, and perhaps the soda which the dung contains, by combining with a portion of the oil that has escaped digestion, still further favouring germination. In prosecution of this fact, a number of turkeys were made to swallow ripe olives; the dung was collected containing the swallowed kernels, the whole was placed in a stratum of earth, and frequently the kernels thus treated vegetated easily, and a number of young plants were procured. And in order to produce upon olives a similar effect to that experienced from the digestive power of the stomach, a quantity of them were afterwards macerated in an alkaline lixivium; they were then sown, and proved highly productive. Most of the plants found on coral islands, and in various places, are propagated by the same means of passing through the digestive canal; and it is probable that the seeds of many of them are equally assisted by the same process. And even when they are completely disorganized and digested, the material to which their refuse is converted, and which, combined with the animal secretions that accompany it, is called dung, very powerfully contributes, as every one knows, to render the soil productive. So that by the wisdom of Providence, animal and vegetable fructification are reciprocally dependent on each other, and are alternately causes and effects.—See *Gastric Juice.*

By some of the numerous experiments of Gosse, of Geneva, performed upon himself, he ascertained that the animal and vegetable fibre, concrete albumen, white and tendinous parts, paste containing fat or butter, substances which have either not undergone fermentation, or which do not readily undergo that process, remain longer in the stomach, offer more resistance to the gastric juice, than the gelatinous parts of animals or vegetables, fermented bread, &c.; that the latter required but an hour for their complete solution, while the former were scarcely dissolved at the end of several hours. The following are the result of some of Gosse's experiments:—

I. *Substances that were not digested in the usual time in the stomach.*

a. Of the Animal kind, were tendinous parts, bones, oily or fatty parts, indinated white of egg.

b. Of the Vegetable kind, oily or emulsive seeds — expressed oils of different nuts and kernels, dried grapes, and the skins of fish, rinds of farinaceous substances, pods of beans and pease, skins of stone fruits, husks of fruit, with grains or seeds, capsules of fruits with grains and ligneous stones of fruits.

II. *Substances partly digested.*—Pork dressed various ways, black puddings, fritters of eggs, fried eggs and bacon.

Vegetables. —Salads of different kinds, rendered more so when dressed—white of cabbage less soluble than red—beet, cardoms, onions and leeks—roots of scurvy grass, red and yellow carrots—succory, are more indigestible in the form of salad than in any other way. The pulp of fruit with seeds when not fluid—warm bread and sweet pastry, from their producing acidity—fresh and dried figs. By frying all these substances in butter or oil, they became still less soluble. If, however, they are not dissolved in the stomach, they become so in the course of their passage through the intestines. —See *Solution.*

III. *Substances easy of Digestion, and which are reduced to Pulp in an hour, or an hour and a half.*—Veal, lamb, and in general the flesh of young animals, are sooner dissolved than that of old. Fresh eggs, cows-milk; perch boiled with a little salt and parsley; when fried or seasoned with oil, wine, and white sauce, it is not so digestible.

Vegetable Substances.—Herbs, as spinach mixed with sorrel, are less soluble; celery, tops of asparagus, hops, bottoms of artichokes, boiled pulp of fruits seasoned with sugar, pulp or meal of farinaceous seeds, different sorts of wheaten bread, without butter, the second day after baking, the crust more than the crumb; salted bread of Geneva more so than that of Paris, without salt; brown bread, in proportion as it contains more bran, is less digestible. Rapes, turnips, potatoes, parsneps, not too old. Gum arabic, but its acid is soon felt: the Arabians use it as food.

IV.—*Substances which facilitate the menstruing power of the gastric* *juice.*—Among these are sea-salt, spices, mustard, scurvy grass, horse radish, capers, wine, spirits in small quantities, cheese, particularly when old, sugar, various bitters, &c.

V.—*Substances which retard the gastric power.*—Water, particularly hot, taken in large quantities, occasions the food to pass into the intestines without being properly dissolved. All acids and astringents: Peruvian bark taken half an hour after dinner stops digestion. Also all unctuous substances; kermes, corrosive sublimate. Gosse also observed that employment after a meal suspended or retarded digestion; as well as leaning the breast against a table; and that repose of mind, vertical position, and gentle exercise promoted it. — See *Gastric Juice. Digestion.*

SUCCORY.—There are two kinds of succory, the garden and the wild. The latter is but little used for culinary purposes, owing to its bitter taste, though it has been employed medicinally. It is divided into several species, and grows in kitchen gardens; that which is tender, young, and well-tasted is the best. It is of a moistening and cooling nature, provokes urine, allays thirst, and creates an appetite. It agrees in hot weather with young, bilious, and sanguine complexions, and those who have a hot stomach.

SUGAR.—Sugar is a very sweet agreeable saline juice, expressed from a kind of canes or reeds, growing in great plenty in the East and West Indies. It is supposed that sugar was not known amongst the ancient Greeks and Romans, who used only honey for sweetening, but this question is not yet entirely decided among the learned, who are moreover divided concerning the country to which it was indigenous. Some say that it came originally from China, by way of the East Indies and Arabia into Europe, others assert that the sugar cane is as natural to America as India, while others maintain that it was not known in America till the Europeans transplanted it thither. According to the now prevalent opinion, sugar had its origin in the eastern part of Asia. From that continent it was transplanted to Cyprus, thence to Sicily, thence to Madeira and the Canary Isles; and from these last to Brasil. Where, indeed, some suppose that sugar was originally and spontaneously produced. About the year 1506, sugar canes were brought from Brasil and the Canaries, and planted in Hispaniola; and in 1641, they were transplanted from Brasil to Barbadoes, and thence to our West India Islands. Our ancestors made use of sugar rough as it came from the cane; the boiling, baking, and refining of it being, comparatively, a modern invention.

SUGAR, WHITE.—The essential salt of the sugar cane, prepared by clarifying the juice with eggs or blood, getting rid of the superfluous acid by the addition of lime water, and evaporating it till the sugar crystallises on cooling. The uncrystallizable portion (treacle) is then drained from the granular mass, and that which remains in the first instance got rid of by passing small portions of water, or, according to a late improvement, of saturated syrup through the mass: 112lbs. of raw sugar yields on refining 56 of refined lump, 22 of bastards, 29 of molasses, and 5 of dregs. The different proportions of treacle left in the sugar occasioning a corresponding variation of colour through all the shades, from dark-redish brown to a pure brilliant white; the brown, cheaper kinds, being used in clysters, in making wines, and in those syrups which are of a dark colour. The white refined sugar for medicines and light coloured syrups. Sugar is nutritive, and laxative, but griping; externally applied to ulcers it is escharotic.

SUGAR-CANDY, WHITE. —

Sugar crystallised by the saturated syrup, being left in a warm place, from 90 to 100 degrees Fahrenheit, and the shooting promoted by placing sticks or a net of threads at small distances from each other in the liquor; it is also deposited from compound syrups, and does not seem to retain any of the foreign substances with which they were loaded. It may, however, be coloured red by means of cochineal. Being longer dissolving than sugar, it is used in coughs to keep the throat moist, and is also blown into the eye as a very mild escharotic in films or dimness of that organ.

SUGAR, BEET.—Made from red or white beet root, or from the mangel worsel, by decoction in water, expression, and evaporation, or by simple expression of the juice: it yields 1-100th of sugar.—See *Beet*.

SUGAR, BIRCH.—Is made by wounding the trees in the spring of the year, by boring a hole under a large arm of the tree, quite through the wood as far as the back on the opposite side, collecting the sap that flows from the wound, and evaporating it to a proper consistence. These are the native sugars of cold countries, and might be made in England for all the purposes of home consumption. Sugar from the maple and walnut trees is made in the same manner. The sap of the sugar maple yields about 1-10th.

Sugar from apples and pears is obtained by expressing the juice, adding chalk to remove the superabundant of acid, and evaporating it to a due consistence; it does not crystallise, and is a kind of white treacle. One cwt. of apples yields about 84lbs. of juice, which will produce nearly 12lbs. of this substance.

Palm sugar is manufactured on a large scale from various species of palms, particularly the Palmyra, or borassus flabelliformis, which by cutting off the tip of the spadix, furnishes daily and for five successive months about six pints of toddy, and this again affords by evaporation a pound of sugar. The wild date, or elata sylvestris, bleeds for three months successively, and the cultivation is so managed that toddy may be procured all the year round; fifty trees yield daily about seventeen gallons of toddy, furnishing by evaporation about 46lbs. of jagory. Sugar may also be made from various other plants and fruits.

SUGAR, AS AN ANTISEPTIC, IN PRESERVING VEGETABLE AND ANIMAL SUBSTANCES. — Although sugar has the property of preserving vegetable substances from decay, it is in consequence of the price only used for fine fruits, and aromatic substances. The preservation of the latter, by means of sugar, constitutes a principal part of the art of the confectioner, where considerable attention to many minutiæ is necessary for the success of each preparation. Vegetable substances may either be candied or preserved in syrup, or their juices may be employed in making syrups, jellies, or fruit cakes. The art of confectionery is very difficult, and successfully to attain requires attention to many particulars which, at first, may appear frivolous, and even improper, but which by experience have ultimately been found to be no less essential. The classification and boiling of sugar to its proper degree is of primary importance, and has not, perhaps, been sufficiently examined by scientific men.

A weak syrup has a tendency to ferment, and quickly becomes sour if kept in a temperate degree of heat, consequently it is not calculated to prevent the natural fermentation of vegetable juices, which always increase its disposition to corrupt. It has been ascertained by pharmaceutists, that a solution prepared by dissolving two parts of double refined sugar in one of water, or any watery fluid, and boiling the solution a little, forms a syrup which neither ferments nor crystallises; and this proportion may be considered the basis of all syrups, and seems to be the degree of boiling syrup called smooth by the confectioners, as exemplified in their syrups de capillaire and orgeat. Sugar is equally powerful in preserving animal substances from putrefaction. As a novelty to foreign artists we translate, from their great precursor, Cœlcus Apicius, a method of *preserving meat without salt*:—"Let fresh meat of any kind be covered with honey; but hang up the vessel, and use when you please. This succeeds better in winter; but will last a few days in summer. The same may be done with meat that has been cooked."—Lib. i. cap. 8. A variety of other methods have been attempted for the preservation of food, but these have been rather matters of curiosity than utility.*

Wet Preserves in Syrup. — In making wet preserves in syrup, it is necessary to consider the manner in which the several degrees of strength in syrup is to be judged of in boiling. If moist sugar be used, the syrup must be clarified as follows:—

To clarify Moist Sugar. —Break the white of an egg into your preserving pan, put in four quarts of water, and beat it up to a froth with a whisk, then put in twelve pounds of sugar, mix all together, set it over the fire, and when it boils put in a little cold water; in this manner proceed as often as may be necessary till the scum appears thick on the top, then remove it from the fire, and let it settle; take off the scum, and let it pass through a straining bag. If the sugar should not appear very fine, you must boil it again before you strain it, otherwise in boiling it to a height it will rise over the pan; having thus finished the operation you may proceed to clarify your sugar according to the various degrees in which it may be wanted.

1. *First degree, called Smooth or Candy Sugar.* — Having clarified your sugar as above directed, put the quantity you may have occasion for over the fire, and let it boil till it be smooth, which may be known by dipping the skimmer into the sugar, and then touching it between your fore-finger and thumb, and on immediately opening them you will see a small thread drawn between, which will immediately break and remain as a drop on your thumb. This will be as a test of its smoothness in some degree. Then give it another boiling, and it will draw into a larger string, when it will have acquired the first degree above-mentioned.

2. *Second degree, called Blown Sugar.*—To obtain this degree the sugar must be boiled longer than in the first process, and then dip your skimmer, shaking off what sugar you can into the pan, then with your mouth blow strongly through the holes, and if certain bladders or bubbles blow through, it will be a proof of its having acquired the second degree.

3. *Third degree, called Feathered Sugar.*—This degree is proved by dipping the skimmer when the sugar has boiled longer than in the preceding degree. First shake it over the pan, then give it a sudden flirt behind you, and if it be enough the sugar will fly off like feathers.

4. *Fourth degree, called Crackled*

* The property of charcoal to restore sweetness to meat beginning to be tainted, was first pointed out by M. Lowitz, in Petersburgh, 1786, who made numerous experiments on the subject. In the fourth volume of the Journal of Science, there is an account of some successful experiments, in which alternate layers of meat and charcoal were packed in canisters previously filled with carbonic acid, and then carefully luted and covered with bladders. See also Journal de Pharmacie, for September, 1818, for some experiments made by Professor Raymond, upon the antiseptic properties of chlorine.

Sugar.—Having suffered your sugar to boil longer than in the last degree, dip a stick into the sugar, and immediately put it into a pan of cold water, which you must have in readiness for that purpose; draw off the sugar that hangs to the stick into the water, and if it becomes hard, and snaps in the water, it has acquired the proper degree; but if otherwise, you must boil it till it answers that trial. You must take particular care that the water you use for this purpose be very cold, otherwise it will lead to mistakes.

5. *Fifth degree, called Carmel Sugar.*—To obtain this degree your sugar must boil longer than in either of the former operations. You must prove it by dipping in a stick, first into the sugar and then into cold water; and you must observe that as soon as it comes to the carmel height it will snap like glass the moment it touches the water, which is the highest and last degree of boiled sugar. Take care that your fire be not very fierce when you submit the sugar to this operation, lest, flaming up the side of the pan, it should cause the sugar to burn, which would discolour and spoil it.

If refined sugar be used either in the various processes of confectionery or wet preserves in syrup, it need only be melted over the fire in a quarter, or, at most, one-third of water, and as the water evaporates the syrup must be taken up with a large spoon, and let fall again into the pan. If during this manipulation it forms a broad sheet as it falls, it is said to be boiled to a candy height, and will exhibit, when taken from the fire, but still warm, 36° of Beaume's hydrometer; if it has not been boiled quite so far, the sheet is formed but imperfectly, and it exhibits a smaller number of degrees; it is then said to be boiled to a weak candy height. In shaking the ladle of syrup when in this state, it runs over in the form of the feathers of a quill, or drops in the manner of pearls, which, being received in a glass of water, ought to fall to the bottom in solid and brittle globules. If the boiling be continued a little longer these effects are produced in a more perfect manner, and the syrup exhibits 37° by the hydrometer; it is then said to be boiled to a full candy height: if it now be stirred until it becomes cold, it forms a dry powdery mass. As all the water is now evaporated, if the sugar is continued on the fire, it begins to turn red, and acquires a burnt taste.

To preserve fruits then, which are the substances usually preserved in syrup, the latter is boiled to a weak candy height, and poured hot upon the fruit so as to cover it: the juice of the fruit of course weakens the syrup, which must, therefore, be poured off the next day and reboiled to the former height, and then poured on the fruit again, and this must be repeated even a third or fourth time, if the fruit be very juicy, until you are sensible the syrup is no longer weakened by the juice of the fruit.

Dry Preserves in Sugar. — First soak your fruit, if it be juicy, in hard water or in weak alum water, to harden it, and then drain it. Upon the fruit, either prepared or not, syrup boiled to a certain height, and half cold, is to be poured on it. After some hours, the syrup, weakened by the juice of the fruit, is poured off, reboiled, and poured on again, and this to be repeated a third time if necessary. When the syrup is judged to be no longer weakened, the fruit is taken out of it and drained.

Candied Angelica.—The stalks are to be boiled for a quarter of an hour in water, to take away their bitterness, and some of their strong scent; they are then to be put into a syrup boiled to a full candy height; kept on the fire till they appear quite dry, and then taken out and strained.

Candied Orange and Lemon Peel.—The peels are to be soaked in cold water, frequently changed, till they lose their bitterness, and are then put into syrup till they become soft and transparent, when they are to be taken out drained.

Preserves in Honey.—Seeds and fruits may be preserved by being put into honey, and on being taken out, washed, and planted, they will vegetate. Honey has also been used to preserve the corpses of persons who have died at a distance from home, that they might be conveyed thither. The Spartans who fell in battle were usually buried on the spot; but the bodies of their kings were preserved in honey and carried home.

Preserves in Brandy, and other Spirits.—Plums, apricots, cherries, and other juicy fruits, ought to be gathered before they are ripe, and soaked for some hours in very hard water, or in alum water, to make them firm. As the moisture of the fruit weakens the spirit, it ought to be strong, and to each quart of it two ounces of sugar ought to be added.—See *Fish, preservation of.*

SUMACH (*Rhus Coriaria*).—A small tree, a native of the south of Europe. It is singular that this is the only species of the genus rhus which is perfectly innocent; the others being active poisons. The berries, which are red, and of a roundish compressed figure, contain a pulpy matter, in which is lodged a brown, hard, oval seed, manifesting a considerable degree of astringency. The pulp, even when dry, is grateful, and has been discovered to contain an essential oil, similar to that of wood sorrel. An infusion of the dried fruit is not rendered black by a solution of iron: hence it appears to be destitute of astringency. But its acidity is extremely grateful; consequently, like many other fruits, these berries may be advantageously taken to allay febrile heat, and to correct bilious putrescency.

SUPPER.—The objections against suppers are by no means general; consequently, do not apply to every account and condition. A late supper of heavy materials, is decidedly an enemy to sleep; and, on the other hand, going to bed without any supper often prevents sleep. Mankind, says Dr. Franklin, since the improvement in cookery, eat about twice as much as nature requires. Suppers are not bad if we have not dined; but restless nights naturally follow hearty suppers after full dinners. Indeed as there is a difference in constitutions, some rest well after these meals; it costs them only a frightful dream, as an apoplexy, after which they sleep till doomsday. Nothing, continues the same authority, is more common in the newspapers, than instances of people, who, after eating a hearty supper, are found dead in bed in the morning. "I avoid," said Mr. Pennant, "the meal of excess, a supper; and my soul rises with vigour to its employs, and I trust, (he adds) does not disappoint the end of its Creator." The sleep of the labouring man is sweet, whether he eat little or much: for

> "Couch'd on his straw, and fancy free,
> He sleeps like careless infancy;"
>
> SCOTT.

but the abundance of the rich will not suffer him to sleep.—See *Sleep.*

As regards the times of eating, observed by our ancestors, some information may be collected by the following extract from the "Haven of Health," by Thomas Cogan, M.A. and M.B. "When four hours (says he) be past after breakfast, a man may safely taste his dinner; and the most convenient time for dinner is about eleven of the clock before noon. Yet, Diogenes the philosopher, when he was asked the question, what time was best for a man to dine? he answered, for a rich man when he will, but for a poor man when he may. But the usual time in the Universities is eleven, and elsewhere about noon. At Oxford, in my time, they used commonly at dinner, boyled bief with potage, bread and beere, and no more; the quantity of bief was in value an half-a-penny for one man; sometimes, if hunger constrained, they would double their commons." Then of supper; "about four hours or six after we have dined, the time is convenient for supper: which in the Universities, is about five of the clock in the afternoon." "The modern hours of eating," says another, "have arrived at an excess that is perfectly ridiculous. Now what do people get by this? if they make dinner their principal meal, and do not wish to pall their appetite by eating before it, they injure their health. Then in winter they have two hours of candle light before dinner, and at supper they are at table during the pleasantest part of the day; and all this to get a long morning—for idle people, to whom one would suppose the shortest morning would deem too long."—*Warner's Antiq. Culin.* p. 134.

"The stately dames of Edward the Fourth's court rose with the lark, dispatched their dinner at eleven o'clock in the forenoon, and shortly after eight were wrapped in slumber. How would these reasonable people (reasonable at least in this respect) be astonished, could they but be witnesses of the present distribution of time among the children of fashion? Would they not call the perverse conduct of those who rise at one or two, *dine* at eight, and retire to bed when the morning is unfolding all its glories, and Nature putting on her pleasing aspect,—absolute insanity?" —*Pye's Sketches*, 12mo. 1797, p. 174.

In the Northumberland Household Book (pp. 314, 318) for 1512, a thousand pounds, it is there stated, was the sum annually expended in house-keeping. This maintained one hundred and sixty-six persons. Wheat was then five shillings and eightpence per quarter. The family rose at six in the morning; my Lord and my Lady had set at their table for breakfast, at seven o'clock,

A quart of beer,
A quart of wine,
Two pieces of salt fish,
Half a dozen red herrings,
A dish of sprats!!!

They dined at *ten*—supped at four in the afternoon—the gates were all shut at nine, and no further ingress or egress permitted. In the time of Elizabeth, the nobility, gentry, and students, dined at eleven o'clock in the forenoon, and supped between five and six in the afternoon. In the reign of Charles II., four in the afternoon was the hour appointed for acting plays. At present, even dinner with people of quality is considerably latter.

As our ancestors breakfasted early, they also dined early, and had at least two meals after this, as appears from the allowance appointed for a lady Lucy, who seems to have been one of the maids of honour in the court of Henry VIII. This lady, it appears, was allowed for breakfast—

A chine of beef,
A loaf, and
A gallon of ale.

There is an account also of the breakfast of an Earl and Countess, in the Lent season—namely,

A loaf of bread,
Two manchettes,*
A quart of beer,
A quart of wine,
Two pieces of salt fish,
Six baconed herrings,
Four white herrings, and
A dish of sprats.

As regards the quality of different meals at the present day, it appears that we depart more from the custom of our hardy ancestors with respect to breakfast than any other meal. The contrast at first sight appears truly ridiculous. A maid of

* Loaves of a coarser kind of bread.

honour in the court of Elizabeth, breakfasted upon *beef*, and drank ale after it; whilst the sportsman, and even the day-labourer, now breakfast upon tea! The same lady who had so solid a breakfast, had for dinner—

A piece of boiled beef,
A slice of roasted meat, and
A gallon of ale.

IN THE AFTERNOON.

A manchette,
Half a gallon of ale.

FOR SUPPER.

A mess of porridge,
A piece of mutton,
A cheat (a finer loaf),
And a gallon of ale.

To be sociable after supper, there was left on the table—

A manchette loaf,
A gallon of ale,
Half a gallon of ale.

This lady had therefore four heavy meals; instead of which it would be better to recommend the modern plan of late dinners; but, because long fasting is injurious, and when very hungry, one may be incensed to eat more at this principal meal than can be digested, cold meats or soups may intervene by way of collation. For dinner, it would be advisable with all who entertain a proper sense of the importance of health, to keep as much as possible to *one dish*. To prefer *mutton** to lamb, *lamb* to chicken or veal, and *beef*, if tender, to either of the three last; and as fish is soon digested, to unite some butchers' meat to it, and to add to these vegetables; and for convalescent and weak persons, we would estreat those heterogeneous combinations called puddings; and, with the exception of the fruit, the crust of all pies should be condemned. The readers will here recollect, that although eggs and milk are both reckoned wholesome *separate*, when combined they form a compound suited only for strong stomachs.

A late dinner gives a long morning, and precludes the necessity of a hearty supper, and tea may become its substitute. Large meals are ever hurtful to a tender constitution. Pastry, and high-seasoned viands, or dainties, are bad on two accounts—first, because they tempt people to eat more than enough, and secondly, because they are hard of digestion.

SURFEIT.—The consequence of excess of eating and drinking; or of something unwholesome or improper existing in the food. Its symptoms are a heavy load or oppression at the stomach; acccompanied with nausea, sickness, obstructed perspiration, and eruptions in the skin.—See *Gluttony*.

SWINE BREAD.—A sort of root or pulpy shapeless lump, of different sizes, uneven, and growing in the earth, without shooting out any plant, which is supposed to be a reason for its delicious taste. It is much used in food; and is served up after being roasted in ashes, or prepared with wine. Some pulverise it and add it to sauces. The ancients were divided in their opinion with respect to this production; some pretending it to be good food, others that it was bad; hence it may be concluded that it produces both good and bad effects. It is of a restorative nature and fortifies the stomach; but when used immoderately it attenuates and divides the humours. It grows plentifully after autumnal rains and thunder storms. The ancients fancied it had no seeds, and that it was formed of the coagulated juice of the earth or the earth itself, whose parts stagnantly unite together; which gave occasion for the

* When Sanctorius ate mutton, which was a food peculiarly grateful to his stomach, his feelings were pleasant, and his perspiration was copious; when he ate pork, goose, duck, mushrooms or melons, he felt heavy and oppressed; and found by the balance that his perspiration diminished one-half. This proves that the perspiratory discharge is much under the influence of the stomach.

pun contained in the two following lines:—

Semina nulla damus, nec semine nascimur ullo;
Sed qui nos mandit semen habere putat.

Avicen believed that swine-bread produced apoplexy and palsy.

SYRUP.—The name syrup is given to sugar dissolved in water. Syrups are generally made with the juice of vegetables or fruits, or by adding vegetable extracts to other substances. To keep syrups without fomenting, it is necessary to attend to their temperature, and to keep as near 55°F. as possible. A good cellar will ensure this purpose; for there are few summers in which the temperature of such places rises to 60° F. Pharmaceutists have ascertained, that a solution prepared by dissolving two parts of double refined sugar in one of water, or any watery fluid, and boiling the solution a little, forms a syrup which neither ferments nor crystallises; and this proportion may be considered as the basis of all syrups, and seems to be the degree of boiling syrup called smooth (see *Sugar*) by the confectioners. After having squeezed the fruit for the syrup, leave the mass for several days undisturbed: a slight fermentation takes place; this will separate the mucus and rich parenchyme, which rendered the juice viscid. These matters subside gradually, and very often the liquor appears perfectly clear. The liquor indeed may be separated by decantation: then keep what remains under the press, and this, though it will not produce a juice so clear as the preceding, very soon will become so, especially if put into bottles immediately it is expressed, and suffered to ferment for some days.

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TAMARINDS.—The fruit of the tamarind-tree, which grows in the East and West Indies. The oriental sort is drier and darker coloured than the occidental: the former is sometimes preserved without the addition, but the latter has always an admixture of sugar. They are more frequently employed for medicinal purposes, than as an article of diet; but the Africans, and the people of many of the oriental nations, where they are common, make them into a sort of confection with sugar, which they eat as a delicacy, and which cools them in the violent heats of their climates. The pulp of this fruit is one of the most grateful acids; which, if taken in the quantity of from half an ounce to an ounce, or more, proves gently purgative. By its acidity, it is well calculated to quench thirst, and allay immoderate heat; for this purpose, it is in common use in inflammatory disorders, and correcting putrefaction.—See *Imperial.*

TANNIN.—A substance existing abundantly in the excrescences of several species of the oak, called gall-nuts; in the bark of most trees; in some inspissated juices, such as kino and catechu; in the leaves of the tea-plant, sumach, whortleberry, and in all astringent plants, being the chief cause of the astringency of vegetable matter. It is frequently associated with gallic acid, as in gall nuts, most kinds of bark, and in tea; but in kino, catechu, and cinchona bark, no gallic acid is present. The most characteristic property of tannin is its action on a salt of iron and a solution of gentianine. With the peuxide of iron, or better still with the protoxide and paroxide mixed, tannin forms a black coloured compound, which, with the gallate of iron, constitute the basis of writing ink and black dye. For the discovery of artificial tannin, an interesting substance, by Mr. Hatchet,—(see *Philosophical Transactions for* 1805 *and* 1806). Is it not an unfrequent practice to administer medicines containing tannin in cases of debility, and at the same time to prescribe gelatinous food as nutritious, which is evidently improper, as the tannin from its chemical properties, must render the gelatine indigestible.

TARTAR.—A vegetable production, which forms itself on the sides of casks in which new wine is put. It is of a solid consistency, and is thence called by the Germans *wein-stein*, or wine-stone: when burned to ashes, this substance yields a pure vegetable fixed alkali, called salt of tartar. The reader is desired to distinguish between *cream of tartar* and *salt of tartar;* they are both salts, but not of the same class. Cream of tartar is an acid, and is prepared from tartar by dissolving it in water, and crystallizing the solution. The sweet wines afford less tartar than the sharp ones, and it is also less valuable. The tartar of Rhenish wine is better than any other, and, in general, those wines which have the most acidity in them yield the most tartar, and that in the largest crystals. Tartar is white or red, according to the colour of the wine from which it is produced. That brought from Germany is the best. Salt of tartar is an alkali, and is prepared from tartar by burning it, the acid being probably changed into an alkali by the fire. Salt of tartar, as well as all other vegetable fixed alkalies, when pure (for, when purified, they are all the same) attract very strongly the humidity of the air, and thereby melt, as it were, into a fluid, which, from its being procured in this singular way, and from its having also an unctuous appearance, though it has no other property of an oil, has been called *oil of tartar per diliquium.*—See *Wines.*

TARTAR, CREAM OF.—Cream of tartar is reputed a great sweetener of the blood, for which some take it in whey or water gruel, or combined with rhubarb or jalap, in the spring time. Alone it is purgative, from two drachms to half an ounce. It forms an agreeable cooling drink, sweetened to the taste. In large doses it acts as a hydragogue cathartic, producing a considerable discharge of serous fluid into the intestines; hence its use in dropsical complaints. Often repeated, however, it is liable to occasion debility of the digestive organs. As it decomposes the carbonate of potass, the cream of these salts will afford a very pleasant purgative draught.

TASTE.—The principal organ of taste is the tongue; and the nearer the top the more acute—the nearer the root the more obtuse. Nothing can be tasted which is not capable of being tasted by the saliva. Neither is it sufficient for a body to be soluble that may be tasted; it must have some saline or acrid property, in order to stimulate the nervous substance of the tongue—hence, whatever has less salt in it than the saliva, is totally insipid. The taste is rarely found to be too acute, unless through some fault in the epidermis covering the tongue. When this is wounded, or removed, or diseased, then the taste, becoming too acute, is painful, &c. The sense of taste may be impaired, like that of any other external sense, from various diseases of the brain and nerves; of which, however, there are but few instances. In some people it is more blunted, as well as more acute than in others; and where the sense of taste is deficient, that of smelling is also. It is sometimes deficient owing to the want of saliva; for a dry tongue cannot perceive any taste: hence this sense is very dull in many diseases especially in fevers, &c. It is also frequently depraved; as when, for instance, we have a perception of taste without the application of any thing to the tongue; or, when any thing is applied to it, we feel a taste different from what it ought to be. This happens, for the most part, from a vitiated condition of the saliva, which is itself tasted in the mouth. Independent of this, the taste may be vitiated from other causes, &c. In almost every disease, especially in fevers, physicians inquire into the state of the tongue, and not without the greatest reason; as from this they can judge of the state of the stomach, of the thirst, or rather the occasion the patient has for drink, when, on account of delirium or stupor, he neither feels his thirst, nor is able to call for drink. And, lastly, from an inspection of the tongue, physicians endeavour to form some judgment concerning the nature, increase, and remission of the fever.

TEA.—The tea-tree, which has employed the pens of so many eminent writers, still deserves some attention, as the nature and properties of it are but imperfectly understood. It is of a genus of plants which *botanists* call *Thea*, belonging to the class trigynia. Of this genus, Linnæus enumerates two species, viz. the bohea heavy flower with six petals, and the green tea, having flowers with nine petals. But Dr. Lettsom, in his botanical description of the tea plant, thinks it most probable, that there is only one species, and the difference between the green and bohea teas depends on the nature of the soil, culture, age, and the manner of drying the leaves. He adds, it has even been observed that a green tea tree, planted in the bohea country, will produce bohea, and on the contrary; and on his examining several hundred flowers, brought both from the bohea and green tea countries, their botanical characters have always appeared uniform.

Tea has been known in Europe above two hundred and twenty years, for the Dutch East India Company (who first imported and raised its reputation in Europe) was founded in 1602, upon a contribution at their first settlement of 6,459,840 florins. The English East India Company was formed near the latter end of Queen Elizabeth's reign, their charter being dated in 1599, and their first fleet set out in 1600. But they made no figure before King James I. bestowed his favours upon them. The French East India Company was established in 1664. The Dutch in their second voyage to China carried thither good store of dried sage, and exchanged it with the Chinese for tea; they had three or four pounds of the last for one of the first, calling it a wonderful European herb, possessed of as many virtues as the Indians could possibly ascribe to their shrub-leaf; but because they exported not such large quantities of sage as they imported of tea, they bought a great deal, and gave eight pence or ten pence a pound for it in China. And when they first brought it to Paris, they sold it there at about thirty livres a pound, though it was not of the best sort, for that comes from Japan, and has often been sold at a hundred livres a pound. But about thirty years ago, the Chinese sold it at three pence, and never above nine pence a pound, though frequently mixed with other herbs to increase its quantity.—See *Sage*.

Tea has met with very different opinions, according to the various humours of those who have ventured publicly to offer their sentiments upon it. Some ascribe such sovereign virtues to this exotic, as if it were able to eradicate or prevent the spring of every disease, and extol it to such a degree as to render their panegyrics in favour of it, more like satire than praise. Others on the contrary are equally severe in their censures, and have imputed the most pernicious consequences to it, accounting it no better than a slow but efficacious poison, and a seminary of diseases. While others again seem to question the virtues ascribed to tea, and imagine them industriously magnified to promote and encourage the importation of it to increase the merchant's gain. One great reason of these different sentiments concerning this foreign leaf is, that authors who have *written* upon it, have not taken the trouble to make due inquiry into its virtues, and properties, but have rather taken them upon trust, than examined the truth of what they affirm or deny, by a sufficient number of experiments and observations, which alone might have afforded some satisfaction as regards this popular herb, by enabling them to account rationally for its various surprising effects.

There are two species of the tea tree, viz., 1st. The bohea or black tea; and 2d. The viridis or green tea: both of which are natives of China or Japan, where they attain the height of five or six feet. Great pains are taken in collecting the leaves singly, at three different times, viz., about the middle of February, in the beginning of March, and in April. Although some writers assert that they are first exposed to the steam of boiling water, and then dried on copper plates; yet it is now understood, that such leaves are simply dried on iron plates, suspended over a fire, till they become dry and shrivelled; when cool they are packed in leaden boxes to exclude the air, and in that state exported to Europe.

In Britain teas are divided into three kinds of green and five of bohea. The former class includes

1. *Imperial* or *bloom tea*, having a large leaf, a faint smell, and of a light green colour.

2. *Hyson*, which has small curled leaves of a green shade inclining to blue.

3. *Singlo* tea, thus termed from the place where it is cultivated.—

The boheas comprehend,

1. *Souchong*, which on infusion imparts a yellowish green colour.

2. *Camho*, a fine tea emitting a fragrant violet smell, and yielding a pale shade; it receives its name from the province where it is reared.

3. *Pekoe tea*, is known by the small white flowers that are mixed with it.

4. *Congo*, has a larger leaf than the preceding variety, and yields a deeper tint to water.

5. *Common bohea*, the leaves of which are of an uniform green colour. There are besides other kinds of tea sold under the names of gunpowder tea, &c., which differ from the preceding only in the minuteness of their leaves, and being dried with additional care.

Tea, in its natural state, is certainly an aromatic, slightly astringent, and somewhat narcotic, plant; on which account the Chinese refrain from its use, till it has been divested of this property by keeping it at least twelve months. If, however, good tea be drank in moderate quantities, with sufficient milk and sugar, it invigorates the system, and produces a temporary exhilaration; but when taken too copiously it is apt to occasion weakness, tremor, palsies, and various other symptoms arising from narcotic plants, while it continues to aggravate hysterical and hypochondriacal complaints. Tea has also been supposed to possess considerable diuretic and sudorific virtues, which, however, depend more on the *quantity* of warm water employed as a vehicle, than the quality of the tea itself. Lastly, as infusions of these leaves are the safest refreshment after undergoing great bodily and mental exertion, they afford an agreeable beverage to those who are exposed to cold weather; at the same time tending to support and promote perspiration, which is otherwise liable to be impeded.

A certain writer, who we think proceeds somewhat too far in his invectives against this article of consumption, observes that "it had been well for the inhabitants of Great Britain if the tea leaf had never found its way into this country; they would not then have been tormented as thousands of them now are, with an incurable train of nervous symptoms, with stomachic and bowel complaints, and with headach.

To the abuse of tea may be ascribed in a great measure the increased frequency of consumption and many of the disorders of children, especially hydrocephalus (water in the head) rickets, &c., may be traced to the same source."

"The tea leaf, when fresh from the tree, is evidently poisonous. It is true that it loses some of its acrimony by drying, but even in the state in which it is sent to this country it retains much of its narcotic nature. What serious mischief then are they bringing upon themselves, who, as is the case with too many of the lower classes of society, make it a principal part of their daily subsistence! The money which should go to purchase wholesome and substantial food, is squandered away in procuring what of itself affords no nourishment at all; for whatever nourishment is derived from the infusion of tea, is owing to the sugar and milk which are added to it, and were it not for these additions its deleterious effects would be much more powerfully felt. The time, it is hoped, is not far distant when the poor shall be enlightened upon this important point. The next generation will hardly believe that their predecessors took such extraordinary delight in defrauding their body of its proper aliment, and in bringing upon themselves infirmity and disease. Let the rich and the intemperate indulge, if they choose, in the narcotic draught; to their heated and oppressed stomachs it may do no harm, it may even afford momentary relief—but let the poor abstain from it; they have no feverish thirst, no feverish heat to allay after their noon repast. To them it is totally unnecessary as a help to digestion, and as an article of sustenance it is worthless and improper; they would therefore be better, infinitely better, without it. Besides its narcotic quality, there is another property of the tea leaf which renders its continued use injurious to the constitution; we mean its astringency. Add to these the warm water, and we have in this unnatural beverage, the infusion of tea, three different powers concurring to disorders, first, the organs of digestion, and ultimately the whole system.

"If it be asked what are those who have been long accustomed to tea to substitute in its place? We answer, milk, milk porridge, gruels, broth, cocoa, or the like for breakfast. And in the afternoon milk and water; orgeat, or lemonade in the summer, and coffee in the winter. It should be understood that the preceding remarks apply to the general abuse of tea as an article of sustenance; for its occasional employment in a dietetical and medicinal way in some kinds of sickness is often of use. Thus the simple infusion, without sugar or milk, is a good diluent and sedative in ardent fevers, and as it promotes perspiration and urine it is frequently drunk with advantage in colds, catarrhs, rheumatism, &c. It is also serviceable in cases of surfeit and indigestion."

The Chinese know nothing of imperial tea, flower of tea, and many other names, which in Europe serve to distinguish the goodness and the price of this fashionable commodity: but besides the common tea they have two other kinds, viz., the voui and soumlo, which are reserved for people of the first quality and those who are sick. We have two principal kinds of tea in Europe, viz., green tea, which is the common tea of the Chinese, &c., which is gathered from the plant in April: it is held to be very digestive and a little astringent; it gives a palish green tincture to water and its leaves are much twisted. The second is bohea tea, which is the voui tea, or bau tcha of the Chinese. F. le Compte makes this only differ from the green tea, by its being gathered a month before, viz., in March, while in the bud, and hence the smallness of the leaves as well as the depth of the tincture it gives to water. Others take it for the tea of some particular province; the soil being found to make an alteration in the properties of the tea as much as the season of gathering it. It is all bought at Nankin and thence brought to Europe, where it is now much in vogue.

As to the differences in colour and flavour peculiar to these two kinds and to their varieties, Dr. Lettsom thinks that there is reason to suspect that they are in some measure adventitious or produced by art. He has been informed by intelligent persons who have resided some time in Canton, that the tea about that city affords very little smell while growing. The same is observed of the tea plants now in England, and also of the dried specimens from China. We are not, however, as he observes, to conclude from hence that art alone conveys to teas when cured the smell peculiar to each kind, for our vegetable grasses, for instance, have little or no smell till they are dried and made into hay.

As to the opinion that the green tea owes its verdure to an efflorescence acquired from the plates of copper, on which it is supposed to be cured or dried, he shews that there is no foundation for this suspicion. The infusions of the finest imperial and bloom teas undergo no change on the affusion of a volatile alkali, which would detect the minutest portion of copper contained in them by turning the liquors blue. The fine green colours of these teas, with as little reason, have been attributed to green copperas, as this metallic salt would, on its being dissolved in water, immediately act on the astringent matter of the leaves, and convert the infusion into ink, as happens when a chalybeate water has been employed in the making of tea. On the whole Dr. Lettsom thinks it not improbable that some green dye, prepared from vegetable substances, is employed in the colouring of the leaves of the green teas. And Neumann suspects that the brown colour and the flavour of the bohea sorts are introduced by art: both the green and bohea teas have an agreeable smell, and a lightly bitterish subastringent taste; with solution of chalybeate vitriol they strike an inky blackness. They give out their smell and taste, both to watery and spirituous menstrua; to water the green sorts communicate their own green tincture, and the bohea their brown: but to a rectified spirit they both impart a fine deep green. The extracts obtained by gently drawing off the menstrua from the filtered tinctures are very considerably astringent, and not a little ungrateful, but the spirituous more so.

Savary also speaks of a sort of red tea or tartar tea, called honan tcha, which tinges the water of a pale red, and which is said to be extremely digestive: by means hereof it is that the Tartars are said to be able to feed on raw flesh. Its taste is earthy and much the least agreeable of them all; but this is scarcely known in England.

Tea is to be chosen of the briskest smell, and as whole as possible, and the greatest care is to be taken that it have not been exposed to the air to fall and evaporate. The drink tea is made in China, and throughout the greatest part of the east, after the same manner as in Europe, viz., by infusing the leaves in boiling water, and drinking the infusion hot. Indeed among us it is usual to temper its bitterness with sugar, but the orientals use it without the addition of sugar or milk; however, the Japanese are said to prepare their liquor in a somewhat different way, viz., by pulverising the leaves, stirring the powder in hot water and drinking it as we do coffee. But from the account given by Du Halde, this method is not peculiar to the Japanese, but is also used in some provinces in China. The common people who have a coarser tea boil it for some time in water, and make use of the liquor for common drink early in the morning; the kettle filled with water is regularly hung over the fire for this purpose, and the tea is either put into the kettle inclosed in a bag, or by means of a basket of proper size pressed to the bottom of the vessel, that there may be no hindrance in drawing off the water. The Bants-jaa tea only is used in this manner, whose virtues being more fixed, would not be fully extracted by infusion. The Chinese are always taking tea, especially at meals, it is the chief treat wherewith they regale their friends; the most moderate take it at least three times a day, others ten times or more, and yet it is computed the consumption of tea among the English and Dutch is as great in proportion as among the orientals. As regards the properties of tea they are strongly controverted; the Eastern nations are at least as much possessed with an idea of their extraordinary virtues as the Europeans, but it is perhaps because imagination bears as great a sway there as here. The reason why the gout and stone are unknown in China is ascribed to the use of this plant.

Tea is extolled as the greatest of all medicines: moderately and properly taken, it acts as a gentle astringent and corroborative; it strengthens the stomach and bowels, and is good against nauseas, indigestions, and diarrhœas. It acts also as a diuretic, and a diaphoretic; the immoderate use of it, however, has been very prejudicial to many, who have been thereby thrown into diabetes. From the contradictory opinions, even of medical writers, on teas, the natural inference seems to be, that they possess neither noxious nor beneficial powers, in any very considerable degree. They seem, when moderately used, to be for the most part innocent; in some cases they seem to be salutary—in others they are apparently prejudicial: they dilute thick juices, and quench thirst more effectually, and pass off by the natural emunctories more freely than more watery fluids; they refresh the spirits in heaviness and sleepiness, and seem to counteract the operation of inebriating liquors.

From their manifest astringency, they have been supposed to strengthen and brace up the solids, but this effect experience does not countenance, as it is in disorders, and in constitutions wherein corroborants are more serviceable, that the immoderate use of tea is peculiarly hurtful; in cold, indolent habits, cachexies, chlorosis, dropsies, and debilities of the nervous system. Dr. Lettsom has particularly inquired into the medical qualities and effects of tea, and having observed that infusions of bohea and green tea contribute to preserve sweet some small pieces of beef immersed in them, he infers that they possess an antiseptic power when applied to the dead animal fibre, and from their striking a purple colour with salt of iron, he deduces their astringent quality. From other experiments, he concludes that the activity of tea chiefly resides in its fragrant and volatile parts, and that if the use of it be beneficial or injurious to any particular constitution, it becomes so principally by means of this odorous fragrant principle. He apprehends that it is the safest course to use the infusion of the more ordinary kinds of this plant, which abound less with this fragrant principle; or the tea may be boiled a few minutes in order to dissipate this volatile part, which stands charged as the cause of those nervous affections that are said to be produced or aggravated by the use of this liquor. By this process may likewise be extracted more copiously the more fixed, bitter, and stomachic parts of this vegetable. Dr. Lettsom, who seems to be thoroughly persuaded of the occasionally noxious effects of this volatile principle, in the finer teas especially, recommends this last mentioned mode of making tea, or the substitution of the extract instead of the leaves, by the use of which, the nervous relaxing effects which follow the drinking of tea in the usual manner, would be in great measure avoided. This extract has been imported hither from China, in the form of small cakes, not exceeding a quarter of an ounce each in weight, ten grains of which might suffice one person for breakfast; but it might easily be made here by simple decoction and evaporation, by those who experience the noxious qualities of the volatile principles of this plant. It may be farther observed, that the effect of drinking large quantities of any warm aqueous liquor, would be to enter speedily into the course of circulation, and pass off as speedily by urine or perspiration, or the increase of some of the secretions. Its effects on the solid parts of the constitution would be relaxing, and thereby enfeebling. If this warm aqueous fluid were taken in considerable quantities, its effects would be proportionable, and still greater if it were substituted instead of nutriment. The infusion of tea, however, has these two peculiarities: it is not only possessed of a sedative quality, but also of considerable astringency, by which the relaxing power ascribed to a more aqueous fluid is in some measure corrected on this account. It is, perhaps, less injurious than many other infusions of herbs, which, besides a very slight aromatic flavour, have very little, if any, stypticity to prevent their relaxing and debilitating effects. So far, therefore, tea, if not too fine—if not drunk too hot, nor in too great quantities, is, perhaps, preferable to any other known vegetable infusion; and if we take into consideration, likewise, its known enlivening energy, our attachment to it will appear to be owing to its superiority in taste and effect to most other vegetables. Tea may be considered as a very powerful aphrodisiac, and Dr. Percival imputes the immense population of China among other causes to the general use of it.

Whether tea possesses any diuretic, diaphoretic, and other virtues, for which it has been celebrated, is rather doubtful, as these may be in part owing to the great quantities of warm water with which the infusions of it are made. Good tea, particularly the black sort, made strong, and used in a moderate quantity, is antispasmodic and refreshing; it is, therefore, calculated to relieve the cramp of the stomach, and pains of the abdomen, if they proceed from flatulency. But, according to circumstances, it may even increase spasmodic contractions; for instance, if they arise from a vitiated bile, from worms, or from hysteric and gouty complaints, in either of which cases tea will most certainly not relieve, but rather prolong the spasmodic contractions of the vessels. The relaxation which tea occasions in the first passages, renders it peculiarly hurtful to females of lax fibres, or thin blood and irritable habits. To enumerate the great diversity of nervous symptoms attending its abuse in such constitutions would lead us too far from the prescribed limits; but so much is certain, that the vapours arising from liquors drunk very hot like tea, weaken the lungs, and dispose their votaries to frequent colds and catarrhs, which the more readily make a transition into consumption. Individuals of a rigid and solid fibre, of a dry and firm body, may be allowed to drink tea in moderation, as it will not easily hurt them. By adding a spoonful of old Rhenish wine, or ardent spirits, to every cup of tea, it may be so far improved as to make it less flatulent; but the frequent repetition of it, even in this form, must be detrimental to the body. A moderate use of tea may sometimes be of service to persons in a perfect state of health, yet, for daily use, it cannot be recommended. It, doubtless, occasions a gentle stimulus, and rouses the mind for a short time; hence it is, perhaps, the best and safest refreshment, after violent heat and fatigue of the body. Hence, as the means of increasing perspiration, tea is an useful beverage to travellers in cold weather, when insensible perspiration is liable to be checked. Hypochondriac and hysteric people, however, are much deceived in the efficacy of tea as a diluent drink; for all the evils arising from relaxation, a weak stomach, and flatulency, under which such persons usually labour, are, by the habit of drinking tea, increased to the most alarming degree. The *cold* stomach which they propose to warm by it is a mere phantom of the brain, for this sensation of cold is nothing but relaxation, which, instead of being removed by *hot* liquors, is increased by every repetition of them.

Des Guignes gives the following characters of the different kinds of tea, as he observed them in China, using the common English orthography, with their usual price at Canton. The following are called generally *black teas:*—

Bohea tea, from *Bo-he*, the name of a place, is of a black cast, and yields a deep yellow infusion; sells in China for twelve to fifteen taels, 6*s.* 8*d.* each, per pic, about 130lbs., or, from 7½*d.* to 9¼*d.* per pound.

Congou tea, from *cong fou*, great care. The infusion is lighter than that of bohea, rather green, and seldom of an agreeable smell; sells for 25 to 27 taels, or from 15½*d.* to 16½*d.* per pound.

Souchong tea, from *se ow chong*, a very little sort. The infusion is a fine green, smells agreeably; the leaves ought to have no spots on them: sells for 40 to 50 taels, or from 2*s.* 6½*d.* to 2*s.* 6¾*d.*

Pekoe tea, from *pe kow*, white leaf bud. The infusion is light and rather green, has a violet scent, and a very fine perfume in the mouth; sells for 34 to 60 taels, or, from 1*s.* 9*d.* to 3*s.* 1*d.*

Imperial tea—mao tcha, of the Chinese, has a green cast; the infusion is also green, the leaves large, and of a fine green; has a slight smell of soap. To these may be added:—

Campoi tea, which is intermediate, between congou and souchong.

Padre, or *pou chong tea*, a very fine souchong, imported in papers for presents.

Caper tea, made into balls with gum, and scented, imported only in small boxes.

The *green teas* of Des Guignes are,

Songlo tea, from the place where it is grown; has a leaden cast, the infusion is green; the leaves are longer and more pointed than the black teas: sells for 24 to 26 taels, or from 1*s.* 3*d.* to 1*s.* 6*d.* The inferior sorts have yellow leaves, and a smell of sprats.

Hyson tea, from *he tchune*, first crop, is of a leaden cast; the infusion is a fine green, the leaves are handsome, without spots, and open quite flat; it has a strong taste, and a slight smell of roasted chestnuts; sells for 50 to 60 taels, or, from 2*s.* 6*d.* to 3*s.* 1*d.*

Tchu tcha, of which he gives no characters, but it sells for 65 to 70 taels, or 3*s.* 4*d.* to 3*s.* 7*d.* per lb.

Besides, there are imported into England these green teas:—

Hyson skin or *bloom tea*, being the large loose leaves of the hyson; a faint delicate smell; infusion a pale green.

Superior hyson skin, intermediate between hyson and hyson skin.

Gunpowder tea, a superior hyson, in small round grains, of a blooming greenish hue.

Chilian or *cowslip hyson*, a scented hyson, mixed with small berries that give it a cowslip flavour.

The Ankay teas obtained from *An Khe* have the same appearance as the Canton teas, but are inferior in flavour and generally sell from 4*d*. to 1*s*. a lb. lower. They are supposed to be picked from wild tea plants.

The leaves of tea having little or no smell, they are rendered fragrant by mixing with them the leaves of olia fragrans and camellia sesanqua.

TEA, SUBSTITUTES FOR.—It would undoubtedly be more conducive to health if we could altogether dispense with the use of warm liquors, at least when in a healthful state. But if this practice must be indulged in, we ought to choose the herbs growing in our own meadows and gardens, instead of making ourselves tributary to distant nations. With this intention the late Dr. Solander introduced his *sanative tea*, not with a view of making it a secret or quack medicine, under which character it is now sold in this country, but of recommending the use of it to those individuals who require diluent liquors, and to the heavy, sluggish, and phlegmatic. Dr. Tissot had previously recommended the stalks of cherries and the leaves of peach and almond trees, to the poor people of Switzerland, as substitutes for tea, but we possess a variety of plants infinitely superior to these, of which I have myself occasionally made trial. I shall divide them into 3 classes, viz.

1st. The strong, spicy, and balsamic plants, such as balm, peppermint, sage, and the like.

2d. The strongly aromatic flowers among which those of the *rosa pimpinellafolia* (or the rose whose leaves resemble those of the Burnet saxifrage), and the *woodroof* or the *asperula oderata,* L., deserve the first place, and far excel in flavour all the teas imported from China; and lastly,

3d. The mild aromatic leaves and blossoms of trees and shrubs; for instance, the blossoms of the lime tree and the black thorn, the leaves of the peach and almond trees, and particularly the first tender leaves of the *whortle berries* or the *vaccinium myrtillus*, L., which cannot be distinguished from real tea when properly gathered and dried in the shade.

After having pointed out the best substitutes for Indian tea, we cannot suppress our earnest wish that even these indigenous vegetables may not be abused by decocting them in too much water, which, when swallowed hot, must be detrimental to the stomach, the lungs, the nerves, and the whole human frame. This important article cannot be better concluded than by quoting the prophetic words of an experienced physician. "Tea," says he, "will induce a total change of constitution in the people of this country. Indeed it has gone a great way towards effecting that evil already. A debility, and consequent irritability of fibre, are become so common that not only women but even men are affected with them. That class of diseases which, for want of a better name, we call nervous, has made almost a complete conquest of the one sex and is making hasty strides towards vanquishing the other." And Dr. Buchan emphatically observes, "did women know the train of diseases induced by debility, and how disagreeable these diseases render them to the other sex, they would shun tea as the most deadly poison; no man can love a woman eaten up with vapours, or worn down with diseases arising from relaxation."

Various ways of making tea.—"The Japanese reduce their tea to a fine powder by pounding it; they put certain portions of this into a tea cup, pour boiling water upon it, stir it up, and drink it as soon as cool enough."

Dubuison's method.—"Put the tea into a kettle with *cold* water; cover it close, set it on the fire, and make it all but boil. When you see a sort of white scum on the surface, take it from the fire; when the leaves sink it is ready "

"The night before you wish to have tea ready for drinking, pour out as much cold water as you wish to make tea; next morning pour off the clear liquor, and when you wish to drink it make it warm." See "*L' art du lemonadier,*" *de Dubuison. Paris.*

The usual way, however, by infusion in boiling water, or water that has just ceased to boil, appears to be the most preferable mode. The "Chinese put a drachm of tea to a pint of water, and frequently take the yolk of two new laid eggs, and beat them up with as much fine sugar as is sufficient for the tea, and stir all well together."—*Sir Kenelm Digby's Cookery. London,* 1669.

TEAL.—This fowl is placed among the number of wild ducks.—See *Duck.*

TEETH.—Small bones, the well known organs of mastication, fixed in the alveoli or sockets of the upper and lower jaw.

In early infancy nature designs us for the softest aliment, so that the gums alone are then sufficient for the purpose of manducation; but as we advance in life and require a different food, she wisely provides us with teeth, which are the hardest and whitest of our bones; and at full maturity they usually amount to thirty-two in both jaws—namely, sixteen above and as many below. Their number, however, varies in different subjects, though seen to exceed the above number, and rarely known to be fewer than twenty-eight. Every tooth is composed of its enamel and its internal bony substance; and each may be divided into two parts, viz., its body, or that part which appears above the gums; and its fangs or root, which is fixed into the socket. The teeth of each jaw are commonly divided into three classes—the incisors or cutting teeth, the canine, and the molares or grinders.

1. The incisors are the four teeth in the forepart of each jaw: they derive their name from the office they are made to perform in dividing and cutting the food in the manner of a wedge.

2. The canine are the longest of all the teeth, and derive their name from a resemblance to a dog's tusk. There is one of these teeth on one side of the incisors, so that there are two in each jaw. They are not calculated, like the incisors, for cutting or dividing, or for grinding the food, but appear rather intended for laying hold of substances. Mr. Hunter remarks of these teeth, that we may trace them in similarity of shape, situation, and use, from the most imperfect carnivorous animal, which is believed to be the human species, to the lion, which is the most perfectly carnivorous.

3. The molares or grinders, of which there are ten in each jaw, are so called, because, from their size and figure, they are calculated for grinding the food.

The canine and incisors have only one fang; but the three last grinders in the under jaw have constantly two fangs, and the same teeth in the upper jaw three fangs. These fangs are sometimes divided into two points near their base, and each of these points has, probably, been occasionally considered as a distinct fang. The grinders likewise differ from each other in appearance. The two first on each side, which have very properly been named biscuspid, or two pointed, from having a double point, seem to be of a middle nature between the incisors and grinders; they have in general only one root, and the body of the tooth terminates in two points, of which the anterior one is highest, so that the tooth has in some measure the appearance of one of the canine. The two grinders on each side beyond these are much larger. Their body forms almost a square with rounded angles; and their grinding surface has commonly five grinding points or protuberances, two of which are on the inner and three on the outer part of the teeth: the last grinder is shorter and smaller than the rest, and from its coming through the gums later than the rest, and sometimes not appearing till late in life, is called *dens sapientiæ*, or tooth of wisdom; on which the variation in the number of teeth usually depend.

The teeth are subject to a variety of accidents and diseases. The gums necessarily become so affected as to cause them to fall out, and the teeth themselves are frequently rendered carious by causes which hitherto have not been satisfactorily explained. The disease usually begins in the side of the tooth that is not exposed to pressure, and gradually advances till an opening is made in the cavity, when the tooth is liable to considerable pain from the exposure of the nerve to the influence of the air. Independent of these accidental means by which the teeth are occasionally affected, old age seldom fails to bring with it certain and natural causes for their removal. The sockets fill up, and the teeth consequently fall out; the gums then no longer meet in the forepart of the mouth, the chin projects forwards, and the face being rendered much shorter, the entire physiognomy appears considerably altered.

The formation and structure of the human teeth sufficiently indicate their use. It is from these circumstances that men may be considered as partaking of the different classes of animals; and as approaching more to the nature of the carnivorous than the herbivorous tribe, though upon the whole formed for a mixed aliment, and fitted equally to live upon flesh and vegetables. Those therefore who would confine a man entirely to vegetable aliment do not appear to have studied nature. As the grinders are the last teeth that are formed, so are they usually the first that fall out—indicating, as it would appear, that the same kind of food is required in old age as in infancy. The teeth serve also another and secondary purpose besides their use in mastication; that is, they essentially assist in the articulation of the voice. Various dentrifices are used in order to preserve the teeth, purify the breath, cleanse the interior of the mouth, and to resist the destruction of the enamel,—many of which are besides excellent correctors of a scorbutic tendency in the gums. An elegant preparation of this kind is, Smith's Antiseptic Dentrifice, prepared at Mr. Chalk's, No. 47, Minories. Its properties have been highly extolled, and it is in high repute as an accompaniment to the toilette. Charcoal, myrrh, cream of tartar, Peruvian bark, have likewise considerable claims as antiseptic tooth powders, and with which people in general are by no means unacquainted.

TEMPERAMENT.—The peculiar constitution of the humours. Temperaments have been variously distinguished: the division most generally received is that of Hippocrates; namely, into the sanguineous, phlegmatic, choleric, and melancholic; founded on the supposition that the human body contains four humours very different with respect to heat, cold, moisture, and dryness, that is, blood, phlegm, yellow bile, black bile; which several humours are frequently brought up in vomiting and discharged per *anum*; also that health consists in a due mixture of these four humours, and disease is the consequence of a superfluity of any of them. But Galen, always partial to subtleties and divisions, has reckoned up nine kinds of constitutions, namely, four *simple*, the hot, the cold, the moist, and the dry; the cold and moist, the cold and dry; four *confirmed*—the hot and moist, the hot and dry, the cold and moist, the cold and dry; and one moderate healthy temperament, consisting in a mediocrity, inclining to no extreme. The division of Hippocrates being the most simple, is that which is generally preferred and best understood. It is not easy, however, in every instance, to distinguish these various constitutions; but any person capable of reflection, &c. may, by observation and experience, discover the temperament of which he himself principally, partakes; consequently, by proper precautions guard against the inconvenience it may be exposed to. As regards these temperaments it follows that there can be no such thing invented by man as an universal remedy to prevent or cure all kinds of diseases; because that which would agree with the hot must disagree with the cold. Again, we cannot with certainty vouch for any particular kind of food or medicine that will agree with this or that individual until we are acquainted with his particular temperament; and consequently that it is absurd to prescribe a method of diet or physic for any man without such knowledge.

TEMPERATURE.—A definite degree of sensible heat as measured by the thermometer. The power of producing cold is very limited still, compared with that of exciting heat. Hitherto no one has been able to sink the temperature of any substance below 90° or 120° below the freezing point of water; but an air furnace was constructed by Mr. Wedgwood, in which he raised a heat equal to 185 degrees of his pyrometer, or 2512° of Fahrenheit; and by means of oxygen gas more intense heats than even this have been produced.

The temperature at which vapours rise with sufficient force for causing the phenomena of ebullition, is called the boiling point. The heat requisite for this effect varies with the nature of the fluid.

Sulphuric æther boils at - - - - - - 96° F.
Alcohol - - - - - 173°
Pure water - - 212°
White oil of turpentine must be raised to 316 and
Mercury - - - - - 600 before

either exhibits marks of boiling. The boiling point of the same liquid is constant, so long as the necessary conditions are preserved, although liable to be affected by several circumstances. The nature of the vessel has some influence upon it; Sir Gay-Lussac observed that pure water boils precisely at 212° F. in a metallic vessel; and at 214 in one of glass. The circumstance, however, which has the greatest influence over the boiling point of fluids, is the vacation of pressure. All bodies upon the earth are constantly exposed to considerable pressure. Liquids are exposed to this pressure as well as solids, and their tendency to take the form of vapour is very much counteracted by it. And as the atmospheric pressure is variable, it follows that the boiling point of liquids must vary also.

The influence of the atmosphere over the boiling point, is best shewn by removing its pressure altogether. The late Professor Robinson, found that fluids boil in vacuo, at a temperature 140° lower than in the open air.—(*Wollaston, Phil. Trans.* 1817). Thus, water boils at 70°F.; alcohol 30° F.; and ether 44° F. This proves that a liquid is not necessarily hot because it boils. The heat of the hand is sufficient to make water boil in vacuo, as exemplified by the common pulse glass; and ether, under the same circumstances, will enter into ebullition, though its temperature be low enough for freezing mercury.—See *Boiling. Thermometer.*

TEMPERATURE, REDUCTION OF.—By a moderate reduction of temperature, vital and chemical action are retarded, by reducing to a state capable of freezing the juices and fluids of organised bodies, by destroying vitality, and coverting the water present into ice, and thus removing a condition essential to chemical action. Many vegetables, and some animal substances, such as eggs, possess what is termed latent life, and as long as this is not annihilated, they resist fermentation. A very low temperature destroys this principle, while a higher one calls it into action; after which, it cannot be suspended without being destroyed altogether, and thus it is longest preserved in a temperature just a little higher than the former. An egg that has been frozen is killed, and soon after it is thawed, rots. On the other hand, by incubation, or an equal degree of heat, the life of the chick becomes active, and cannot again be checked with impunity; while, at a moderate low temperature, the latent life of an egg continues a great length of time, ready to be excited into action when placed in favourable circumstances, and resisting the natural tendency to chemical change. The same observation nearly applies to vegetables. Succulent roots, for instance, can be long preserved in a moderate low temperature, but if it be raised, they begin to shoot; or if it be reduced too much, they die and soon rot.—See *Heat. Cold, Preservative effects of.*

TENCH.—There are two kinds of tench. The sea tench (*Merula seu tinca marina*) which is not used as food; and the other a fresh water fish well known. It varies in size—some of them are as large as carp, having two small stones in their heads, to which various medicinal properties were ascribed by the ancients. The tench affords tolerably good nourishment; although condemned by many of the ancient physicians, on account of its viscous and excrementitious juices. Lemery, although he does not consider it to be very wholesome, does not, however, believe it to be pernicious, having observed no bad effects from its use. It agrees at all times with young bilious people who have a good stomach, provided it be used in moderation. It prefers muddy and standing waters to such as are clear and rapid; consequently is met with chiefly in pools, lakes, and marshes, rather than in rivers, in which, nevertheless, they are sometimes found, but more especially in those that are full of mud and dirt, on which they feed; and hence the reason why they have been disapproved of. Authors inform us, that there is such a particular partiality existing between the tench and the pike, that notwithstanding the latter devours every other kind that comes in his way, it spares by some unaccountable forbearance the tench.*

THERMOMETER.—An instrument to shew the relative heat of bodies. Fahrenheit's thermometer is that chiefly used in England.—(See *Zero.* It consists of a glass tube, containing a portion of mercury, with a graduated plate annexed to it. The tube is hermetically sealed, to preserve the metal from the pressure of the atmosphere. The manner in which a thermometer is affected by the temperature of bodies, is as follows:—When this instrument is brought in contact with any substance, the mercury expands or contracts, till it acquires the same temperature; and the height at which the mercury then stands in the tube, indicates the exact temperature of the substance to which it has been applied. The thermometer does not shew the quantity of caloric or principle of heat in all bodies, such, for instance, as that which is latent, or chemically combined with any body; as in fluids, which require a certain portion of

* This fish is called in Latin, tinca, quasi tincta; and indeed it has a colour distinct enough from most other fishes. By some it has been called piscis ignobilis, vilis, and pauperiorum cibus; and Ausonius calls it vulgi solatium, which denotes the little value put upon it by the ancients.

caloric to keep them in a state of fluidity, such portion is not indicated by the thermometer. The property called temperature of bodies, does not shew the measure of their caloric, but merely the degree of dilatation which the caloric they contain in a disengaged state, is capable of producing in the substance of which the thermometers are formed.

Every substance requires its own quantity of caloric to raise it to a given temperature; but when raised to that temperature, every further degree of caloric is precisely shewn by the thermometer. The caloric of fluidity is that portion of heat which is a necessary part of fluids; though different fluids require different portions of it to preserve them in a fluid state. All fluids operate upon the thermometer in the same manner as solids; for whatever sensible caloric may be contained in any liquid, that portion is accurately shewn by the thermometer. Nature is uniform in all her results; for, if a thermometer be ever so often plunged into boiling water, it will always stand at the same point, provided the pressure of the atmosphere be the same. Melting snow will always shew the same degree upon the thermometer, in whatever state the atmosphere may be.

As regards the range and regulation of themselves, that of Fahrenheit between the freezing and boiling points of water is divided into 180°; and as the greatest possible degree of cold, was supposed to be that produced by mixing snow and muriate of soda, that was made the zero—thus the freezing point became 32°, and the boiling point 212°. The centigrade thermometer of modern temperature, places the zero at the freezing point, and divides the range between it and the boiling point into 100°. This has long been used in Sweden, under the name of Celsus's thermometer. Reaumur's thermometer, formerly used in France, divides the space between the freezing and boiling of water into 80°; and, like the centigrade thermometer, places the zero at the freezing point. De Lisle's thermometer is used in Russia. The graduation commences at the boiling point, and increases towards the freezing point 150°. In Wedgewood's pyrometer, the zero corresponds with 1077° of Fahrenheit's, each degree of which is equal to 130° Fahrenheit. Therefore 180° F.=100° C.=80° R.=150 De L.=13-18ths W.—See *Temperature.*

THIRST.—The sense of hunger is well known to be seated in the stomach (see *Hunger*); that of thirst in the mouth and fauces. It is a feeling of a still more imperious kind than hunger; particularly in hot climates, or when any of the watery secretions are increased. It is one of the most distressing symptoms of fevers and inflammatory complaints, especially in inflammation of the stomach. Hot spices, saline substances, and, more particularly, common salt, increase it, as do all causes augmenting the different secretions. The end of drinking, therefore, would appear to be to repair the losses sustained in the fluids. If thirst be not appeased, a general irritation comes on; the sensation of dryness in the mouth and fauces augments, accompanied with a burning feel and an accelerated pulse. Although thirst appears at first very oppressive, drink is by no means so necessary to the continuance of the life of every animal, as solid food. Several species of warm-blooded animals, as parrots, quails, mice, and others, can subsist without drinking; and individuals of the human race have been known, by dint of perseverance, to conquer the sensation of thirst: and Sir George Baker has recorded a case in the Transactions of the College of Physicians, of a man who lived in a state of perfect health for many years, without drinking.

Thirst and hunger are the two incentives which, when combined, promote the common purpose of rendering the animal attentive to its own preservation. When their call is obeyed, they afford a source of pleasure; as much as when they are neglected or resisted, they are a cause of great and even fatal suffering: but in the production of these two very opposite results, pleasure and pain, thirst is far more energetic and intense than hunger. The quickness with which the taking of drink appeases the first of these sensations, contrasted with the slowness with which solid food is taken into the stomach, may, perhaps, in some measure tend to explain the really greater enjoyment generally felt in quenching thirst than in satisfying hunger.—(*Dr. Mason Goode*, vol. 1, p. 132). *Hunger* and *thirst* are mere *sensations*, sensations of the stomach, and they seem really to be incompatible with one another; for a thirsty animal is not hungry. Hunger does not produce thirst; and an animal does not drink till it has digested its food. People will say otherwise; they will say, I have seen a cow drink the moment she began to eat. Well, so they may, for that is just the time when she should drink; the stomach is then empty, and the water that she then drinks does not remain above what the cow may have just at that instant ate, but it passes down into the stomach, and fills the paunch, enters into and fills up the *cooking cavities*, as I may call them. People feel hungry when their stomach is full; this you will frequently find to be the case. A healthy young man, after eating a pound of beef steaks, and after having washed them down with a good quantity of strong drink, will be as hungry as if he had never seen the beef steaks, and ready to swallow a barrel of oysters. There are people who eat continually, and are never satisfied but when they are eating. *Abernethy's Lectures*, p. 352.

This desire of always eating is a morbid sensation; which may be allayed by putting the feet in cold water; as was the case of a woman in Bartholomew Hospital, who was eternally eating. (*Vide Op. Citat.*) Extreme thirst is a morbid sensation; and this morbid sensation must be first cured before you have any control over the immoderate thirst.—See *Thirst, excessive.*

The principal intention for which thirst and hunger are instituted being the nourishment of the body, the importance of the latter sensation is sometimes represented as more intense and more evident than that of the first. Solid food gives out the essential parts of the blood, and the utility of drinks, in relation to this fluid, is not always so manifest. Hunger and thirst differ strikingly from one another in the time and situation of their development, as well as in their local and general phenomena. Contrasted with hunger, thirst comes on suddenly, and if it be not quenched, it creates a state of suffering—real pain. It is not at all like what, in relation to hunger, is called an appetite, which enters into the class of agreeable sensations. In thirst, the mouth, and especially the throat, are affected; in hunger, the stomach is the seat of uneasiness. Thirst, even when not very ardent, is accompanied with a true local and general excitement, while hunger, if at all protracted, occasions chilliness, paleness, and a disposition to faintness. The differences between hunger and thirst, when long continued, and assuming the character of diseases, or rather between the effects of a total abstinence from drink, and those of a complete abstinence from solid food, are still more strongly marked. Death, which is the end of unappeased hunger and thirst, takes place much sooner from thirst, and the more so, because no remission ensues in the cruel and progressive cause of its symptoms. Death, from want of solid aliment, always approaches more tardily, and its phenomena, characterised by irregular paroxysms, are attended with remissions of greater or less continuance.

One of the first effects of the generality of diseases is to increase thirst, and to make the patient require a larger proportion of drink, while the appetite is more or less completely annihilated, and a necessity for abstinence produced. Through the progress of diseases, while thirst continues, the appetite cannot return, and even if it were, in this state of things, it would only be a fallacious indication of a fictitious want, that could not, with safety, be gratified. The decline of the disease, and the approach to a state of convalescence, denoted by the gradual diminution of the thirst, are the surest indications of the return of the appetite. And as regards the therapeutic means, it is equally a fact, that drinks which extinguish or allay thirst, create appetite. Certain medicines also, particularly antispasmodics and opium, which are known to diminish hunger, excite a good deal of thirst, and lastly, all generous alcoholic wines, which allay or delude the sense of hunger, have, at the same time, an opposite effect upon the sensation of thirst.

THIRST, EXCESSIVE. — Constant craving of drink, accompanied with a sense of dryness in the mouth and throat.

Simple thirst is a natural feeling; immoderate or inextinguishable thirst the result of some diseased action, or a symptom of some other complaint, or some peculiar state of the body, the removal of which alone will effect a cure. As a symptom, immoderate thirst is chiefly present in the hot fit of inflammatory fevers, in dropsy, dysentery, diarrhœa, diabetes, and other discharges. It is, also, frequently excited in wet-nurses, as soon as the child takes hold of the nipple; but perhaps is not only more powerfully excited, but also more intolerable under the torture inflicted to extort a confession of guilt, in which case it is said to form the worst part of the punishment. The intense agony brought on by immoderate thirst, the consequence of bodily suffering, is well delineated in the heart-rending description of the fatal event that took place in the black-hole at Calcutta; see *Annual Register*, 1758.

The most grateful palliatives to immoderate thirst are the vegetable acids, especially the ascescent fruits, and a decoction of sorrel leaves, slightly inspissated with gum arabic, and sweetened to the taste. Liquorice root, which among the Greeks held so high a reputation as a slaker of thirst, as to be designated the "thirst extinguisher," has little or no effect. And, as suggested by Dr. Cullen, it is most probably true, that it only acts in this manner when the root is well chewed, by which means the salivary glands become stimulated, and yield a more copious secretion, which has the effect of moistening the fauces, and consequently, of allaying the thirst.

THIRST, MORBID. — The desire for drinking excessive, or impaired. As regards the immediate cause of thirst, many vague hypotheses have been suggested; the least plausible of which are here passed over in silence. By some, thirst is imputed to the dryness of the nervous papillæ of the pharynx, arising from a diminution of the salivary and mucous secretions, Yet in a variety of cases, thirst exists quite independently of a want of moisture in the pharynx; while such beverages as are calculated to prevent the dry state of that organ, do not always succeed in quenching thirst; and, in many instances, the best means of assuaging it, whatever may be its violence, are certain general therapeutic plans, which cannot possibly operate by moistening the pharynx, or its nerves. In thirst, there is, perhaps, always a sense of dryness in the fauces; and yet dryness of this organ does not appear to be the cause of thirst; the intensity, at least, of the feeling, does not appear to depend on the intensity of the dryness: for there is sometimes but little thirst, where the tongue to its very roots is covered with a thick and dry crust, as in the height of continued fevers; while it is often intense under the influence of violent passions, and intolerable on a surcharged stomach, while the tongue and fauces are not affected whatever.

Other physiologists have attributed the cause of thirst to a diminution of the aqueous part of the blood. Bichat inclined to this theory, and conjectured that the introduction of water into the veins would, by its mixing with the venous blood, have the effect of quenching thirst in the same manner as drink taken in the ordinary way. This conjecture is now ascertained to be a fact. Baron Dupuytren, by injecting water, milk, whey, and other fluids into the veins, frequently appeased the thirst of animals subjected to experiment, and long exposed to a burning sun. By varying these experiments with liquids known to be agreeable or unpleasant to dogs, he found that the animals derived from these liquids so employed, the same sensation of taste as if they had been given by the mouth. In fine, when milk was thrown into the jugular veins of dogs, they made a lapping motion with their tongues, just as if they were taking the milk up with them. Some analogous experiments were made by Orfila, who had frequent occasion to tie the gullet of dogs, in order to prevent the expulsion of the poisons which they had been made to swallow. In order to appease the thirst, excited by the fever resulting from the extensive wound in their necks, he injected water into their jugular veins. By this method of quenching thirst, the only one practicable while the gullet was tied, which was practised in a great number of instances, he always succeeded in affording immediate relief. The blood of animals which had long been in a thirsting state, was also submitted to distillation, and it was found that the diminution of its watery part was always in proportion to the length of their abstinence from drink. — See *Dict. des Sciences Med.* tom. ii, p. 469.

The ordinary modes of quenching the agonizing sensations of thirst and hunger are well known to be eating and drinking, yet when these cannot be used, other means are substituted. For instance, violent pressure against the coats of the stomach, whether externally or internally, is well known to take off the gnawing sensation of hunger; and stimulating the fauces, to take off the burning faintness of thirst. It is on this last principle, that chewing a mouthful of hay alone, or simply moistened with water, proves so refreshing to a tired horse, and is found so serviceable, when we dare not allow him, during a long day's journey, to quench his thirst in the natural way. Savages and wild beasts are equally sensible of the benefit to be derived from pressure during hunger, and adopt it on all convenient occasions where no opportunity is afforded them of assuaging it in the usual way. The maris or pangolin, an animal that swallows its food whole, will swallow coals, stones, or any other substances, if it cannot obtain nutriment; not that its instinct deceives it, but for the purpose of acquiring such a pressure as may blunt the sense of hunger which it finds intolerable. Almost all carnivorous animals pursue the same plan; and a miscellaneous mass of pieces of coal, stone, slate, and earth, or other hard materials, is often met with in the stomach of ostriches, cassowaries, and even toads. The inhabitant of Kamschatka secures the same object by swallowing sawdust; and some of the northern

Asiatic tribes, by a board placed on the region of the stomach, and rudely laced behind with cords, drawn tighter and tighter according to the urgency of the sensation. At home, a similar expedient is often resorted to by binding a handkerchief round the region of the stomach. It is not impossible, therefore, for a time, to overcome these natural sensations without the natural means; and it is equally known that the passions of the mind have as strong an influenee over both hunger and thirst as any of the substitutes above adverted to.—See *Hunger, &c.*

THISTLE (*Carduus Marianus*). The lady's, or dappled thistle.—The young stalk, about the month of May, peeled and soaked in water, boiled or raw, is a very wholesome salad, eaten with the usual condiments. Some eat them sodden in broth, or baked in pies like artichokes; others prefer the tender stalks boiled or fried. The leaves when young surpass when boiled the finest cabbage, and in that state are diuretic.

THORN APPLE (*Datura Stramonium*).—Numerous cases are on record of the poisonous effects of the leaves and seeds of this plant. When some of the British troops were under Sir J. St. Clair. (1765) in the vicinity of Elizabeth town, New Jersey, three of the soldiers collected a quantity which they mistook for lambs quarters (chenopodium album), and dressed and ate it. One of them became furious and ran about like a madman. The second was seized with genuine tetanus or universal cramp, and died. The stramonium was some years since used to a considerable extent in asthma, and there is reason to believe, that in some cases it proved deleterious. It is so violent, that it ought to be banished from practice till at least experiments have shewn its utility.—See *Culinary Poisons.*

THORNBACK.—(*Raia clavata*). A well-known salt water fish. It has a good taste, and is much used as food. It is rather hard of digestion, is apt to generate wind, and to produce heavy and gross humours; and if eaten before it lie some time it will be attended more or less with the above effects.

There are several kinds of thornbacks, some of which have their backs all over diversified with white spots like stars; though on others they are only seen on the tail. A thornback ought to be chosen when they are plump and tender; and they should be some time before they are cooked. It breeds abundantly, and there is never any lack of it in the market. It is salted in some places and dried in the sun or by means of fire. When well dried it will keep a long time.—See *Raia.*

THYME, (*Thymus Vulgaris*).—There are two species of thyme cultivated for culinary purposes—the common aud the lemon thyme. The common or garden thyme (*Thymus Vulgaris*, L.), is a low evergreen under shrub, a native of Spain and Italy, and cultivated in this country since 1548, and probably long before. It seldom rises above a foot high, has smaller flowers than the common noted thyme, and is fine and delicate in its flavour. There are two varieties of the broad and narrow leaved, besides the variegated, grown for ornament. The indigenous, spicey, and balsamic herbs, such as thyme, sage, parsley, marjoram, cannot be too much recommended for culinary use, especially in broths; as they are well calculated, by their aromatic virtues, to assist the digestion of many strong articles of food, which daily cover our tables, and these excellent herbs are not liable to the adulterations with which most of the foreign spices are vitiated.

It possesses nearly the same virtues as marjoram and produces the same effects. The powers ascribed to this herb by the old physicians are, that it strengthens the brain, and attenuates and rarifies the viscous humours. It is good in asthmas, creates an appetite, assists digestion, expels wind, and resists poison. Its too frequent use puts the humour into too violent an agitation. It is good in cold weather, for old people, for phlegmatic habits, and weak stomachs.

Wild thyme, or the common thyme, contains less essential oil, and is much milder than the garden thyme. Although neglected, it has considerable powers as a gentle stimulant and diaphoretic. It recovers the head-ach from intoxication.—Half an ounce of the leaves may be infused in eight ounces of water, and taken during twenty-four hours. Thyme possesses nearly the same virtues as marjoram, and produces the same effects. The powers ascribed to this herb by the old physicians are, that it strengthens the brain, and attenuates and rarifies the viscous humours. It is good in asthma; creates an appetite; assists digestion; expels wind, and resists poison. Its too frequent use, say they, puts the humours into too violent agitation. It is good in cold weather for old people, for phlegmatic habits, and weak stomachs. The young leaves and tops of the lemon thyme (*T. Citriodorus*, P. S.) are used in soups, stuffings, and sauces. For these purposes, the broad-leaved common is generally preferred; but the flavour of the yellow is much liked in peculiar dishes.

TOBACCO.—This plant was not known in Europe till after the discovery of America by the Spaniards, and was first imported about the year 1560. It received its name from Tobacco, a province of Yucatan, in New Spain, North America. It was brought into England in the reign of Q. Elizabeth, and it is supposed, either by Sir Francis Drake or Sir Walter Raleigh.

The leaves of tobacco have a strong disagreeable smell, a very burning taste: distilled in a retort, without addition, they yield an acid, empyreumatic, poisonous oil. They give out their acrid matter both to water and spirit, but most perfectly to the latter. The several sorts of tobacco imported from abroad are stronger in taste than that of our own growth, and the extracts made from them much more fiery, but in less quantity. Taken internally, even in a small dose, or decoctions used of it as a clyster (as in strangulated hernia) tobacco proves violently emetic and cathartic, occasions extreme anxiety, vertigoes, stupors, and disorders of the senses. In all cases where it is used medicinally much caution is necessary. The most frequent adoption is by way of snuff, as a sternutatory, or as a masticatory, by chewing it in the mouth, or by smoking it in a pipe.—See *Smoking*, and *Snuff*.

Armurath IV., emperor of the Turks, the grand duke of Muscovy, and the emperor of Persia, prohibited the use of tobacco in their states: and our James I. wrote a treatise expressly against it, entitled "A Counterblaste to Tobacco." By a Bull of Pope Urban VIII. such are excommunicated as take tobacco in churches.

The smoke of tobacco received by the anus is said to be of singular efficacy in obstinate constipations of the bowels. Hoffman observes that horses have often been relieved by this remedy, but in the human subject it has been rarely tried; and on the same authority some of the common people who laboured under excruciating pains of the intestines, have been freed in an instant from all pain by swallowing the smoke. Both the decoctions and the smoke are not unfrequently injected in cases of incarcerated hernia, and often with success. The smoke thus applied is recommended as one of the principal means for the revival of persons apparently dead from drowning or other sudden causes; though it is now disused in these cases, as, from its narcotic power, being prejudicial. Tobacco is sometimes employed externally in unguents and lotions, for clearing foul ulcers in cattle, destroying cutaneous insects, &c.; it appears to be destructive to almost all kinds of insects, to those produced on vegetables as well as on animals. A strong decoction of the stalks, with sharp-pointed dock and alum, is said to be of good service used externally in cutaneous distempers; especially the itch: some boil them for that purpose in urine. The same decoction is said to be infallible in curing the mange in dogs. Tobacco beat into a mash with vinegar or brandy, and laid on the stomach, has sometimes good effects in removing hard tumours of the hypochondria. We have the history of two cures made by such applications in the *Edinb. Med. Essays*, vol. ii. p. 41. The juice of this plant is said to be good against ulcers and mortifications. Some caution, however, is requisite even in the external uses of tobacco, particularly in solutions of continuity; as there are instances of its being thus transmitted to the blood so as to produce violent effects. A drop or two of the expressed oil, put on the tongue of a cat produces violent convulsions and even death itself in the space of a minute; yet the same oil used on lint, and applied to the teeth has relieved the toothach: though it must be to those that have been used to tobacco, otherwise great sickness, retching, vomiting, &c. happen, when it is thus applied; and even in no case is the internal use of it warranted in ordinary practice.

TORTOISE (*Testudo*—from *testa*, a shell, because it is covered with a shell. The name of a genus of animals, of the class *amphibia*, and order of *reptiles*).—The land tortoise is found in mountains, forests, woods, fields, and gardens. It lives upon fruits and herbs, worms, snails, and other insects. It may also be fed in houses with bran and flour. They hide themselves in winter time in caves and crevices, like the serpent tribe. The flesh of the tortoise is very good, and resembles veal. It seems rather strange, that Galen, and others who have treated of foods, should say nothing of this animal. Their flesh is nourishing and solid food; but, as it is hard and viscous, it ought to be well boiled before it be brought to the table; and well seasoned with such things as may assist digestion.

There are several kinds of tortoises in reference to the places where they live: those found on land, are called land tortoises—others are sea-tortoises; a third fresh-water ones, and a fourth kind live in muddy places. Most of them are amphibious; and all possess nearly the same flavour and nutriment. It agrees at all times with young persons of a hot and bilious constitution, with those that are used to much exercise, and that have a good stomach.*

TOUMER, or TUM. — In the culinary art to stir a sauce; also to pare and cut roots, vegetables, and fruits neatly.

TOURTE.—A puff paste pie.

TRAINING, GYMNASTIC.†—Athletic exercises, judiciously adapted

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* Pliny says, there are sea-tortoises in the Indies so large, that the shells of each of them are big enough to cover small houses, and to make barks of, with which the people of these countries sail into the islands of the red sea. Galen, and other ancient authors, who have treated of foods, make no mention of this animal.

† The word gymnastic is derived from the Greek γυμνος, which means *naked*, performed by men naked, in the public games. The term is applied to a method of curing diseases by exercise, in that part of physic which treats of the rules that are to be observed in all sorts

to different constitutions, situations, and ages, in which the Greeks, from whom gymnastic exercises are derived, attained an extraordinary degree of perfection. The great advantage of a course of bodily exercise cannot be disputed, when it is considered how many individuals meet with a premature grave from want of activity, motion, and nervous energy, though their organisation may in no respect be deficient. Besides, a body inured to frequent and laborious exercise, will not be easily affected by external causes of disease, being secured, as it were, by a coat of mail, against the attacks of many acute disorders. The Greeks attempted to cure diseases in their first stages, or at least to arrest their progress, by the systematic institution of gymnastic exercises. They caused the patient to move in various postures, applied gentle friction to the whole surface of the body, and used a variety of methods to overcome the languor of the muscles, by rousing the muscular energy. In relaxed and emaciated individuals, whose organisation is deficient in the proper degree of tone or elasticity, this method must be allowed to possess great advantages, though it will not admit of being applied indiscriminately to all diseases.

All who wish for health, vigour, and a long and happy life, will study the art of gymnastic training, by suitable exercises, and a diet best adapted to constitution; and as Captain Barclay's work on Training is not only expensive, but out of print, and as there is no book on this important science to be had at a moderate charge, we shall avail ourselves of the present opportunity to throw together some improved observations on the subject, and their application to the strengthening of nervous and debilitated constitutions, as well as for the purposes of gymnastic enterprises. Training, according to the method now established, consists in a series of exercises and regimen, particularly adapted for the purpose of gaining additional strength, in order to undertake any Herculean feat, as running, walking, boxing and the like. It was known to the ancients, who paid considerable attention to the means of augmenting corporeal vigour and activity, and accordingly, among the Greeks and Romans, certain rules of regimen were prescribed to the candidates for gymnastic celebrity. We are not, however, in possession of any detailed account of the particular kind of diet in use among the Greeks previously to the solemn contest at the public games, although we are assured that the strictest temperance, sobriety, and regularity in living were indispensably requisite. The candidates, at the same time, were subjected to daily exercise in the *Gymnasium* for ten months, which, with the prescribed regimen, constituted the preparatory course of training adopted by the Athletæ of ancient Greece. Among the Romans, the exercises of the *Palæstra* degenerated from the rank of a liberal art, and

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of exercises for the preservation of health. This is said to have been invented by one Herodicus, born at Salymbra, a city of Thrace, or, as some say, at Leutini, in Sicily. He was first master of an academy, where young gentlemen came to learn warlike and manly exercises, and observing them to be very healthful on that account, he made exercise become an art, in reference to the recovering of men out of diseases, as well as preserving them from them, and called it *gymnastics*, which he made a great part of his practice. But Hippocrates, who was his scholar, blames him sometimes for his excesses with this view; and Plato exclaims against him with some warmth, for enjoining his patients to walk from Athens to Megara, which is about twenty-five miles, and to come home on foot as they went, as soon as ever they had but touched the walls of the city.—*Hooper's Medical Dictionary.*

became a profession which was embraced only by the lowest of mankind. The exhibitions of the gladiators were bloody and ferocious spectacles, which evinced the barbarous taste of the age. The combatants, however, were regularly trained by proper exercise, and a strict observance of regimen. In the more early stages, their diet consisted of dried figs, new cheese, and boiled grain. But afterwards animal food was introduced, as a part of the athletic regimen, and the preference was given to pork, which, Galen asserts, contains more real nutriment than the flesh of any other animal used as food—a fact which, he adds, is decidedly proved by the example of the Athletæ, who, if they lived but for one day on any other kind of food, found their vigour manifestly impaired the next. The preference, however, that was given by the ancients to pork does not correspond with the practice of modern trainers, who entirely reject it in their regimen, though in the manner of preparing their food they exactly agree, *roasting* or *broiling* being preferred to *boiling* by both, and bread *unfermented*, to that prepared by leaven. A very small quantity of fluid was allowed, and this was principally water. When the daily exercises of the ancient Athletæ were finished, they were refreshed by immersion in a tepid bath, where the scurf, pustules, or other unctuous or clammy exudations and adhesions were removed from the skin by the use of the *strygil.** The skin was then diligently rubbed dry, and again anointed with oil. If thirsty, they were permitted to drink a small quantity of warm water. They then took their principal meal, after which they used no more exercise that day. They went occasionally into the cold bath in the morning. They were permitted to sleep as many hours as they chose, and great increase of vigour, as well as of bulk, was supposed to be derived from long continued and sound repose. Previously to entering on this regimen, they were subjected to the evacuating process, by means of emetics, which they preferred to purgatives. The sexual intercourse was strictly interdicted, and " to exercise their patience, and accustom them to endure pain without flinching, they were occasionally flogged on the back with the branches of a kind of rhododendron,† till the blood flowed pretty plentifully. By diminishing the quantity of the circulating fluid, this rough kind of cupping was also considered as salutary in obviating the tendency to plethora, to which they were peculiarly liable." Pure and salubrious air was deemed an indispensable auxiliary, and accordingly, the principal schools of the Roman Athletæ were established in Capua and Ravenna, the most beautiful places in all Italy.

The mode of training for strength and address practised by the ancients, bears some resemblance to that now adopted by the moderns. But as modes of living, climate, and habits of life were somewhat different to those of the present age, the treatment now required to produce the same effects admits of variation, of which the following constitute the principal points to be attended to:—The first operation consists in clearing the stomach and bowels of all obstructing and unwholesome sub-

* An instrument used to scrape off the sweat during the gymnastic exercises of the ancients, and in their baths. Strigils were made of metal, horn, or ivory, and were curved. Some were made of linen, though coarse cloths may be advantageously adopted for it with the same intention.

† The name of a genus of plants in the Linnæan system, so called because its flowers resemble the rose. Class *Decandria*, order *Monogynia*.

stances, and to bring the organs of digestion into a healthy state; for if this be not premised, the subsequent food and exercise will only be thrown away, and the person will never gain in strength. For this purpose, it is the practice of modern trainers, as it was that of the Athletæ of Greece and Rome, first to give an *emetic.* John Smith, of Yorkshire, gave, as an emetic, twenty grains of ipecacuan with one grain of tartar emetic, and this is a very good form. Smith's practice of taking blood from the arm in plethoric habits, is not so much approved of, as blood-letting has a tendency to produce fat, and it is not, on that account, followed by other trainers; for all appearance of fat is injurious to perfect vigour, and produces oppression of the lungs.* Such persons, therefore, who have been properly trained till they are in high athletic condition, have no fat. The same is true of trained race-horses and game-cocks; for when any of these has been killed by accident, while at the top of their condition, not a particle of fat has been found in their bodies, making allowance, of course, for the socket of the eye, and other parts, where there is always less or more natural fat, even in the leanest individual. This emetic plan ought, we are of opinion, to be much more frequently used than it is, both in training and in common life; as it not only clears the stomach of stagnant and offensive matters, but it likewise clears the lungs of phlegm, and the pores of the skin of all obstruction, while it also strengthens the stomach by relieving it of an oppressive load. It has, we believe, fallen into disuse chiefly from the reluctance of people to the disagreeable operation.

* A small bleeding, and subsequently a purgative, to precede the emetic, would certainly be the safest practice. Indeed the propriety of emetics at all is very questionable in training. Ed.

A *purgative* is given a day or two after the emetic, in order to unload the bowels. The medicine chiefly used by Mr. Jackson and other celebrated trainers, is from one to two ounces of Glauber's salts; the same dose to be repeated three times at the interval of two days. Epsom salts might be preferable, as they are milder in their operation, and do not so much irritate the bowels. Calomel, or the milder preparation of the blue pill would form here a good forerunner to the salts, by being taken in the dose of three or five-grain pill, the night before at bed-time. In training race horses and game cocks, a similar kind of purgative treatment is had recourse to: the cocks have barley, which is to them a *scouring* food. The next thing to be attended to, after the stomach, the bowels, and the rest of the organs of digestion are brought, by the means recommended, into healthful action, is a course of strengthening diet. The ancient Athletæ, as previously observed, esteemed pork to be the most invigorating food; but the modern trainers prohibit this article altogether, as it is apt to purge some people, and recommend only beef, mutton, and fowls. It may be remarked, however, that the pork in ancient times was not house-fed, and bloated by the art of fattening; but was had from the woods and fields, where the swine were fed on roots and acorns, and had abundant exercise in the open air. It does not appear either, that the ancients had good beef or mutton.—(See *Pork, Poultry*). It has been observed, that men will relish and digest beef much longer, without change, than any other sort of food; and beef has been found to contain more strengthening nourishment than mutton, though the trainers think mutton is more easily digested. Some doubts, however, are entertained on this subject. The whiter any animal food is, it contains the less of the strengthening principle, produces less excitement of the animal spirits, though it is not on that account the more easily digested, but the contrary. Pork, a white fibred flesh, is the hardest to digest of any, and contains much less nourishment; and as mutton is paler than beef, we would say, that it not only contains less nourishment, but that it is of harder digestion, and is more apt to ferment in the stomach and cause flatulence, colic, and griping; in the same way as mutton broth, when set aside, will ferment much sooner than leg-of-beef soup.

Veal and *lamb*, which are also pale meats, are never allowed; and here may also be remarked, that soup made from either of these cannot be preserved sweet and free from fermenting for many hours in summer. As a change of diet, fowl or rabbit is permitted once a week or so, but never unless with vinegar.—This, we conceive, erroneous. As the fibres of both fowl and rabbit are very pale, they can contain but a very small portion of nourishment, and must readily run into fermentation in the stomach, which the vinegar, far from counteracting, will promote. That the tendency to fat, may be in some measure prevented by the vinegar and the diminution of the nourishment, or that the change may produce more relish for the beef on the following day, are the chief circumstances on which it can be defended. No food indeed is likely to be easily digested, or to afford great nourishment, if it be not eaten with relish; but it must be carefully noted, it does not follow, that all food which is relished is easily digested or very nutritive.—See *Mutton*, *Veal*, *&c.*

The sinewy legs of fowls are by some trainers highly approved of, on the principle, probably of their being strong and tough in the fibres, and of their being, therefore, capable of imparting strength to those who eat them. This is the old foolish doctrine of signatures, which recommended saffron, celandine, and barbery bark in jaundice, because they were yellow like a jaundiced skin; poppies for diseases of the head, because the seed vessel is like the head; and pile-wort for piles, because the root of the herb resembles that disease.* We are quite certain that the sinewy legs of fowls have very little more nourishing power than the white of an egg; and it is well known that is but little, as the nutritive part of an egg is the yolk. The raw yolk of an egg is sometimes, therefore, given by trainers in the morning, and is said to prevent bilious complaints. This must be a mere fancy, and about as well founded as that of the physicians, who forbid bilious patients of eating the eggs at all. There are no circumstances known to us which could establish the fact of eggs having any effect whatever on the bile or the liver.

Fish is prohibited: the trainers say it is watery, and contains but little nutriment. On what the stimulant quality of fish depends is not yet understood, as from its white fibres, and chemical composition, it might be supposed to be rather inert and mild. Salmon, char, and sturgeon, are probably more nutritive than rabbit or fowl, in the case of a change of diet being desirable, for one day in a week or a fortnight.

Neither *butter* nor *cheese* is allowed, on the supposition that they are both innutritive, and of difficult digestion. Butter, besides, like cream, is apt to produce fat, and to make the muscles lax and flabby, the very reverse of that for which the process is intended. Cream-cheese is, of course, still worse than the common sorts. Every species of fat meat,

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* *Vide* Crollius, Basilica Chymica et de Signaturis, *and* Dr. A. Paris, Pharmacologia, vol. i. p. 43. 5th edit.

whatever it may be, is strictly prohibited, as it is said to create bile, and foul the stomach. It does this, we conceive, chiefly by its being so indigestible, that it runs into fermentation before the stomach can act upon it, producing an acid, which causes irritation. Lean meat, consequently, is uniformly preferred to fat; and, what appears to be inconsistent with the recommendation of the sinewy legs of fowls—the lean of fat meat is preferred to the lean of lean meat, which so far from being sinewy, is the most tender, juicy, and sapid.

The use of every kind of vegetables is rigidly prohibited, such as turnips and carrots, which are said to be of difficult digestion; and potatoes, which are said to be too watery a food. This is philosophically correct, except that potatoes are far from being a watery food, if of good quality, and cooked as we have directed; but even so, they are not very fit for producing firm muscularity. Cabbage, and every sort of salad, are greatly worse for affording nourishment. Stale bread is the only article of this species of food allowed. New bread is apt to swell on the stomach, and prevent digestion. Hot rolls would in a few days ruin the training of a fortnight. Biscuit, or bread toasted hard, without much browning, we should prefer even to the best stale bread. The ancient Athletæ used unleavened bread, and this is perhaps still better, though we fear few of our training men would relish it. With respect to biscuit, it is well known that people recovering from fever, and other exhausting diseases, sooner acquire strength with it than with bread, and sailors feel a sensible diminution of strength, when at any time they give up their biscuit, and live on bread. No kind of pies, puddings, hard dumplings, or pastry, are ever used; and the trainers say one might as well take earthenware into the stomach, they are so very indigestible—an opinion in which we decidedly concur; and nothing is a greater source of indigestions and surfeits in England, than the enormous consumption of indigestible articles of this description.

Having given an ample detail of those articles of food which experience and observation have concurred in proving to be the most strengthening and nutritive, for those who are to be prepared for gymnastic exertions, as well as for those who have been enfeebled by disease, or from natural constitution—we shall next consider the equally important subject of dressing these aliments, so as best to retain and improve their nutritive properties. On this topic we can afford to be the more brief, since having already, under the heads of baking, broiling, boiling, roasting, frying, and stewing, furnished a statement of the comparative merits and advantages of these culinary processes, and entered as far into the science of the subject as the present state of knowledge can permit us; we must now be satisfied with the application of our principles to useful practice.

As regards the mode of dressing food for men in training—all substances, however nutritive in themselves, are forbidden to be boiled, stewed, fried, or baked—even brasing is not permitted. All *soups*, accordingly, such as ox-tail, beef-tea, mutton broth, mock turtle, and mulligatawny, are most strictly prohibited, as tending to drench the stomach, reduce the strength, and make the muscles soft and flabby; the only exception is, that when a purgative dose of salts has been taken, a little warm gruel is, properly enough, allowed to *work off* the physic, and as the first meal after, a little boiled mutton with broth. As this, however, is a strong exception to the usual rule of diet, the trainers are very particular about both the mutton and the broth; all the *fat* being carefully removed from both. The broth is for this purpose set aside to cool, and the cake of fat on the top taken off before it is given; then it is warmed up, and again carefully skimmed. When beef-tea is given instead of broth, which sometimes happens, the fat is got rid of in the same way. So very different are the notions which trainers have learned from experience respecting the effects of fat, and those usually maintained by the vulgar, of its highly nourishing properties.

In speaking of liquid food, it may be mentioned that no preparation of *milk* is permitted, as if it is strong and new, it is heavy, and apt to derange the stomach; and if sour, as in the state of butter-milk, though it is not so apt to disagree, it is weak and watery, and productive of little nourishment. All the cream, and the buttery parts of milk also, have the quality of producing fat, rather than firm muscularity. The nutritive properties of milk, indeed, are very ill understood by those who have taken up fanciful and romantic notions of pastoral diet, and the healthiness of rustics who use it liberally. It is not the milk diet, we are bold to say, that makes shepherds healthy and vigorous, so much as their constant exercise in the open air, which will render almost any diet so far wholesome and nutritive. The adoption of the milk diet of the peasant, without his exercise, would not answer the end. Fewterel, however, prescribed rennet milk for drink, and milk pottage for supper; but his system was a bad one.

Boiling, as we have seen on that article, deprives the meat of many of its best juices, and other nourishing properties, which are washed out of the fibres by the constant entrance and recess of the water during the process. Boiled beef, indeed, when not too much done, contains a large enough portion of nourishment for common every-day life; but it is rendered totally unfit for a training diet, by the previous process of salting. This process is found not only to harden the fibres of the meat, and make it more indigestible, but also to deteriorate the animal juices, while it is apt to produce thirst, a circumstance above all others to be avoided in training, for thirst always indicates the presence of some unwholesome stimulus, or excitement, and during its continuance wastes down the substance of the muscles, by the absorbents making an extra demand on their juices.—See *Boiling*.

Stewing has a like effect to boiling, in wasting the nutritive parts of the meat; and it appears also that stewed meat is still less easy of digestion than that which is boiled. *Frying* is, of all the modes of cookery, the worst for training, as it cannot be performed without fat or oil; two things which, as we have seen, are in all stages of training most strictly prohibited.—See *Stewing*.

The first allowable mode of dressing meat, so as to retain and improve its nourishment, is *roasting*. By this process, however, there is still a considerable loss of substance, amounting to from thirty to thirty-five per cent. in beef and mutton, or nearly a third of their original weight. It is not, we conceive, much known in this country, that the French have a way of roasting meat without much waste, or loss of its juices. The joint to be roasted, says the *Almanach des Gourmands*, is to be immersed for a few minutes in melted suet, which will form a coating around it, by penetrating the surface for a little way, which will prove a barrier of resistance to the exit of all the juices of the interior. We cannot, however, answer for the process, as producing either a wholesome or a savoury joint. If meat is to be roasted for a person in training, it ought to be put down to a brisk fire, and not done in the usual way of allowing the heat gradually to penetrate to the centre. The outside, indeed, ought at first to be half-charred by a brisk heat, and this will form as strong a barrier as the French melted suet, in preventing the escape of the juice. Care must be taken that none of the outside, half-charred pieces be eaten, as these would most certainly injure the stomach: only the under-done parts in the interior are to be used, the more raw they are the better, provided they be quite hot, and that the person can relish them; this last circumstance is indispensable, as food that is not relished is never easily digested; for the stomach being put out of humour with it at first, takes some time to recover its tone.—See *Roasting*.

Broiling, however, is by far the best mode of dressing meat for training, as it is a much more perfect way of preventing the escape of the juices than even the process of roasting, performed as we have just directed, by first semi-charring the outside. The great staple articles, therefore, of training are beef steaks and mutton chops, broiled and under-done, with the fat all carefully cut off before they are brought to table.—See *Broiling*.

The seasoning is also of great importance; for, by improper and high seasoning, all the other parts of the process, however carefully attended to, may be ruined. Mustard, pepper, and all hot spices, are prohibited, as producing a high stimulus, and consequently reducing the volume of the muscles by absorption. We ought not, however, object to a very little plain mustard, if the under-done meat could not otherwise be relished. Salt is more objectionable, from its tendency to produce thirst, though few can do well without it. Dr. Darwin was a declared enemy to salt altogether, and for a singular reason, namely, because it is the only *mineral* substance used at table. The fact is, that all animals, and particularly man, are the better for salt, if it be not taken in too great quantity. Salt provisions, however, it is to be carefully noted, are always inferior in nutriment and digestibility to fresh, and ought, as we have already said, never to be used in training.—See *Salt*.

Vinegar is the favourite condiment with modern trainers, though Fewterel denounced all acid juices; but it is, we imagine, a much more questionable seasoning than either mustard or pepper. It certainly prevents thirst. In Yorkshire, the trainers have the meat steeped in vinegar.

Time and Quantity of Eating.—There is not a more important part of the regimen to be observed by a person under training, than the time of taking his meals, and the quantity of food he ought to use. In ordinary life, and more particularly in fashionable life, this is very erroneously managed; for nothing is more detrimental to health than irregular hours, long fasting between meals, and this followed by every kind of repletion. The trainers allow only two full and substantial meals in the day, namely, breakfast at eight, and dinner at two, according to Mr. Jackson; and at five, according to Mr. Hall, of Yorkshire. When the person cannot do without supper, a biscuit and a little cold meat is allowed at eight in the evening; but it is supposed that suppers of all kinds have an injurious effect on the lungs, or as they express it, on a man's wind. With deference, however, to these authorities, an early, light, and nutritive supper, would greatly benefit the trainee, and prevent the bad consequences to the wind, of going to bed with a full stomach. The breakfast is *à la fourchette*, that is, a meat breakfast. Those accustomed to tea or coffee to breakfast, will find this one of the hardest rules to comply with. Indeed it is a standing rule of dietetics to interfere as little as possible with a customary breakfast, for the stomach can bear a change in any meal without injury sooner than in this. The dinner is the same.

As relates to quantity, the trainees are usually allowed to eat as much as they please, and it may be remarked, that, confined as they are to almost one dish, with little variety of cookery or seasoning, there is very little danger of their eating too much. The stomach is very easily satisfied with a single dish; nobody, not even a voracious child, will eat too much plain bread. The ancient Athletæ, who did many very erroneous things, actually gorged themselves with food. It is remarked by Mr. Jackson, that little men eat as much as large men, and sometimes more; but this depends much on constitution and habit. Training sharpens the appetite, and therefore more food will be taken after it has been some time persevered in than at first. One rule ought never to be dispensed with, namely, to have some evidence of the appetite, that a previous meal is digested before taking another. In training game cocks this is always ascertained, by feeling whether the crop is empty.

As regards science of drinking and the quantity.—The leadine rule in training is, that the less that is drunk the better, as in proportion to the quantity taken the flesh becomes more flabby, and the muscles less firm and vigorous. Mr. Jackson and Captain Barclay give their word for the experience of the thing; but our opinion of the subject is, that the quantity of drink must depend, in a great measure, on the sort of food eaten, as well as on the kind of liquor used. If you live almost wholly on vegetable food, like an Irish peasant or a Hindoo, you will for the most part require no drink at all, except when exhausted by heat and perspiration; for water constitutes so large a proportion of all vegetables, that little else is necessary. The peasants, accordingly, who live on vegetable food, seldom drink any thing but ardent spirits, and that necessarily in small quantity. They seldom or never drink large quantities of beer or porter, and have little relish for it. The case is very different with those who live on a large proportion of animal food, as in the case of the working classes in London, who could not live were they not to indulge in copious libations of some kind or other; for as their animal food contains but little water, and besides is strongly stimulant, and spurs on the secretory glands to take so much fluid from the blood, there must be a supply provided to overbalance the expenditure, or intolerable thirst, fever, and other diseases will follow. If, therefore, you eat a large quantity of beef or pork, more particularly if it be salted, or if you drink much wine, or *hard* malt liquor, the stimulus which it produces on the glands causes a greater expenditure of fluids than it supplies. For example, it spurs on the kidneys to give out more urine, the liver to give out more bile, the skin to throw off more perspiration, the lungs to throw off more moisture, and the fountains of the mouth to produce more saliva—and of course all these are to be supplied from the blood, so long as it can afford such supplies. When the blood has at length parted with as much fluid as it can spare, the fountains of the mouth, as well as the liver, kidneys, lungs, and skin, thirst for more, and become hot and uneasy because they cannot get it. Training, it will follow, must produce considerable thirst, as there is so much animal food used, which produces a high stimulus, and so little watery vegetable food.

The sensation of thirst is given us to indicate the want of fluid in the blood, for when in its course the blood comes to the fountains of the mouth, and cannot supply fluid enough to moisten them, thirst is the necessary consequence. But when this is the case, it must be obvious that drinking will not, and cannot, *immediately* quench thirst, be the drink taken what it may, in quantity or quality; for before it can properly quench thirst, it must pass into the stomach and be digested, to fit it for mingling with the blood, and this process also requires some time. From not knowing this simple fact, many persons when thirsty drink too much, and oppress their stomachs with a superfluous quantity of liquor. We have known even water-drinkers very much injure their stomachs by too copious libations.—See *Thirst.*

We shall now offer a few remarks, on the practice of Mr. Jackson, Captain Barclay, and other celebrated trainers. Those, in fact, who are put under training for pugilistic purposes, are prohibited from exceeding three English pints of malt liquor during the whole day, to be taken after breakfast and dinner, and but little after supper. The trainers for running are allowed a little more, but are restricted to four pints a day. The ancient Athletæ were also allowed but a very small quantity of liquid; the *dry* diet, as it is called, having formed an indispensable part of their system. The reasons which modern trainers give for their restrictions are, that the belly is apt to swell from copious drinking, and that it is bad for the wind. Drinking besides promotes perspiration and urine, which are extremely weakening, unless produced, say they, by exercise. Mr. Jackson observes, that if a person having a tendency to corpulence, would restrict himself to three pints daily, instead of copious draughts and large quantities of liquor, he would, in less than two months, find himself two or three pounds lighter.

To quench thirst immediately, without drinking.—If it becomes at any time troublesome, as it sometimes does during a course of training, on the principles already laid down, it will be at once manifest to all, that the speediest way of quenching thirst is—not to supply liquid, but to prevent its expenditure, and to soothe the glands of the mouth, &c., which crave supply. Economists and misers well know, that "to save is to gain." On this principle then, by applying cold water to the skin, you stop the pores and diminish perspiration; even dipping the hands in cold water has often an instantaneous effect in quenching thirst. At sea, this is of the utmost consequence, when water becomes scarce; bathing in salt water being the best remedy for the torments of thirst. Great draughts of liquor are thought to be very injurious, as this only deluges the stomach without quenching thirst, which is more effectually accomplished by taking the liquor in mouthfuls only. The articles on *thirst* and *hunger* will be read here with advantage.

Medicinally speaking, as regards drink,—we would say that water would be the best liquor in training; but it is never given alone in modern times, as it is thought to be a weakening diluent. The ancient Athletæ, however, were allowed nothing but water, or some sort of thick sweet wine. The drink preferred in modern training is good old malt liquor in bottles, and as mild as possible, without any perceptible tartness or harshness. It is occasionally taken with a toast in it, but this is optional. Those who do not like malt liquor, particularly for breakfast, may have half the quantity of wine and water. Even tea (not hot) is permitted, but this reluctantly, as it is not considered strengthening. Hot, or even warm liquor of any kind, is reckoned very weakening, and is never given except warm gruel or beef tea, when taking physic. Those who have been accustomed to wine and insist upon having it, are recommended to take red wine, in the quantity of half a pint to dinner, but none is allowed for supper. Mr. Jackson, however, is positive that if a person accustomed to wine would relinquish it for malt liquor, a few weeks would convince him of the superiority of the home-brewed over the foreign stuff. No spirits are ever permitted, not even with water, under any pretence or consideration whatever. We may also mention, that no milk is allowed, as it is, particularly when strong and creamy, of a fattening and weakening quality. No drink is permitted *before* meals, unless there be distressing thirst.

The articles of food and drink, though of primary necessity, are far from being sufficient to complete the art of training. You may, indeed, most rigidly avoid slops and boiled mutton, beef and greens, beans and bacon, pea soup, strong brandy, and all such weakening stuffs, and you may regulate your meals and the quantity of malt liquors to the nearest point of these directions, and still be as far wide of proper training. The human system is so constituted, that it requires many concurring circumstances, all acting towards a general end, to accomplish the wished for object of giving to it the highest measure of strength, and hence the supreme folly of those who go to their apothecaries and their physicians, and say, "Do, doctor, give me something to strengthen me." There is, you may be assured, no such thing in existence as a strengthening medicine, or it would have, long ere this, been discovered, if not by the doctors, at least by the training genius of Jackson, Barclay, or John Smith. Indirectly, indeed, there may be such a thing: a lancet, for example, is a capital strengthener when it serves to remove an oppressive and weakening quantity of blood; or a blue pill, when it drives a mass of stagnant bile from the liver into the bowels, and so puts the machinery of digestion into order. But the only genuine art of strengthening must not be limited to one or two things alone, but should comprehend proper food and drink, good air, the due regulation of sleep, the due proportion of healthy exercise and intervals of rest, and the proper quantity and kind of clothing.

The intention of exercise in training, is to brace the sinews and the muscles, and give them ease and agility, while at the same time the perspiration produced carries off the fat—well known to be the clog of activity and the sure test of weakness, usually arising from gross living and indolence. The more frequently and vigorously any member of the body is exercised, the more blood will flow to that member. The practical rule which this philosophy teaches us then, is, that whatever member you wish to make strong—exercise it vigorously and constantly, for a long period, which will to a certainty drive thither a superabundant flow of nourishing blood and render it vigorous. The second intention of exercise is to promote ease and agility; and the science of this is founded on the law of our system, that the oftener we do any thing it becomes the easier, and the more glibly do the sinews and muscles slide upon one another. Behold a dancer or a player on the piano-forte, and you will see with what ease and rapidity they perform the most complicated movements; and all from repeated exercise. This is not, however, of so much moment as the reduction of fat by perspiration, which, in training, is effected by hard exercise. But exercise is no less effectual in preventing the *collection* of fat, than removing it when collected. The indolent and idle, who load their stomachs with fat pork, or thick muddy porter, or any other improper diet, and never move a muscle of their body when they can avoid it, must become fat in the following way: fat is the superfluous nourishment which the blood, in its sluggish course, can find no place in want of, and it accordingly throws off the greasy load into every bye corner of the body, sometimes between the muscles, but oftener under the skin, or about the stomach. Fat then, or corpulence, is clearly a disease of repletion and indolence, for which exercise is the sovereign specific cure.

For the purpose, say Captain Barclay and Mr. Jackson, of gaining strength, of diminishing and thinning the blood, and of improving the wind, it will be necessary for the person under training to begin his exercise early in the morning: in summer not later than five, and in winter as soon as the day dawns. A run, or jog-trot, of three miles twice a day, is a common task for pedestrian training, for other purposes less than this will suffice. If this produce much perspiration, he must, to prevent rheumatism, be carefully rubbed dry as soon as he comes home, lying down on a couch till an assistant does this, and gradually puts on his clothes, one limb after another, on the dried parts, and then does not go out again till completely cool. It is one of the standing rules of training, that perspiration never weakens the body when produced by exercise; but it always does so when it is produced by sweating drugs, hot slops, or any other unnatural method. The reasons of this will appear manifest from what has just been said with respect to the stream of the blood, and from what we have so often observed in this publication respecting the want of nourishment in the strongest soups. An hour after breakfast, the exercises are selected from manly sports, such as quoits, cricket, foot-ball, fencing, and sparring. Fives, we should reckon a good exercise, particularly if played, as in Scotland, with the bare hand, without battledores, in which case the ball must, of course, be softer and rather lighter. The more cheerful the exercise is, the better it will prove, as any thing which dulls or deadens the animal spirits is very injurious to training. A fit of low spirits will ruin, in a single day, the training of a whole week; and we should, therefore, prefer any light game, such as golf, which requires walking, and at the same time keeps the mind alive, to simply walking without any object but exercise. Short shooting excursions we should also recommend on the same principle, wherever it shall be convenient. Fishing is too inactive and raw an exercise, but gardening, and particularly digging, we should highly recommend. So well aware were the more ancient trainers of keeping the mind amused while the body was exercised, that music and dancing were among their principal exercises. Dancing is still recommended by our modern trainers, but not insisted on.

Another indispensable rule in training is, that if the person trained becomes very much and rapidly thinner or feverish, his exercise must be diminished. This, however, we should say, ought to be kept from the knowledge of the persons themselves; for as training will, in all cases, make a man thinner, the propensity to indolence would soon discover that so much exercise might be dispensed with, and give rise to comparative idleness, to the entire loss of time and strength. No reading, writing, cards, nor other sedentary employment or amusement is permitted, as this tends to drive the blood to the head, and produce stupor, weight, or giddiness, and impairs digestion and strength.

In the article *Sleep*, which may be consulted, we have laid down certain rules; and here it may not be irrelevant to notice this function as regards training. It is impossible to determine to a minute the proper quantity of sleep necessary for every individual, as some can do with nearly half of what is indispensable to others. It is a good rule to proportion it to the exercise of the mind and body, remembering that the exercise of the mind always requires one-third or fourth more than the exercise of the body. If the person under training, therefore, be of a thinking, contemplative turn of mind, he will require eight hours sleep; while a person of a light, stupid, or thoughtless turn will be as much refreshed by six, though the bodily exercise of both is the same. A great deal also depends on the habit of the person; though we should say nine hours is too much and four hours too little for any one in training. It is indispensable to go to bed not later than ten, and rise not later than six, taking a short walk, or some slight exercise, previously to lying down. The bed should not be soft (a hair mattrass is best) nor loaded with bed-clothes, as the more coolly you lie, the less strength you will lose.

As an indispensable supplement to the rules and directions just laid down in this article on gymnastic training, for exercise and sleep, we shall now advert to the qualities of the air, and the kind of dress most proper for promoting strength; since, without attention to these, what has already been said might prove altogether abortive, and go for nothing. It may be possible to live for some days without food; but it is impossible to live many minutes without air. Since air, therefore, is so necessary for living at all, good air must be highly requisite for those who wish to improve their strength. We shall see shortly how the air acts in purifying the blood, carrying off its refuse, and brightening its colour from a blackish purple to a bright crimson. This purification is performed in the lungs; every breath which we draw, and a purified stream of blood, is, at the same time, sent to every part of the body, to supply nourishment, and repair its waste, wear and tear. Now it must be plain, if the air breathed be already loaded with smoke, and foul exhalations from the dirty alleys and lanes of a city, that it cannot render the blood so bright a crimson as if it were free from all impurity. This, therefore, teaches us what is also well known from experience, that the impure air of cities is unfavourable to health and strength; though it is no less a mistake, however, that the country air is always superior to the air of the town. Purer, it may be, from smoke and other exhalations; but it may be at the same time loaded with moisture, which will equally prevent it from brightening the colour of the blood. Very cold air again will so contract the blood-vessels in the lungs, that less blood will be exposed to the purifying process, which will, accordingly, be imperfect, and weakness will increase, in spite of good food and proper exercise. One strong proof of this is the diminutive dwarfish stature of the Laplanders. They can certainly bear more cold; but it conveys rather a false idea, to talk of the *hardy* inhabitants of the extreme north. Very warm air is weakening, for the very opposite reason. The relaxed vessels of the lungs expose enough of blood to be purified; but the worst of it is, that too much of the thin parts of the blood is carried off by the breath, and what remains is, consequently, too thick and phlegmy to flow in a rapid and smooth current through the body. Trainers, therefore, should, as far as it is possible, select such air as is neither too cold nor too hot; too damp, nor too dry (though, except in the Great Desert, we know few places where air is dry to a fault) and such as is not too confined and impure. It is, we confess, extremely difficult, often impossible, to find air with these conditions; but where any of the offensive circumstances just mentioned greatly superabound, an artificial atmosphere must be contrived within doors, such as in wet weather, a large, open, well ventilated room, with a good fire in it, for the stated tasks of exercise to be performed in. If the air is very cold, as during a hard frost, more exercise ought to be taken to stimulate and relax the contracted vessels in the lungs, and when it is very warm, as in summer, the exercise ought to be proportionally less. When the training is rigid, all low situated places, and the neighbourhood of marshes, lakes, canals, and slow running rivers should be avoided, and a high airy place chosen. It is of the greatest importance that this rule should be followed at night, and that the bed chamber be spacious and well ventilated. Sleeping in good air will contribute more .to strength than even living in good air by day. The practice of Jackson, however, is not to mind the weather, but exercise both on wet and dry days, taking care to change the wet clothes on coming home.

In the former parts of this subject, we have shewn the necessity of reducing all appearance of corpulence by perspiration. Now, this end cannot be attained without strict attention to dress. In order to increase perspiration, says Jackson, an extra quantity of clothes is necessary, particularly during the morning race. The race is always performed in a flannel dress, but the walk may be taken in the usual clothes. The young are recommended, by the same great training authority, to wear calico next the skin; but by older men, flannel is preferred. Those who are trained for running, are put between feather beds and loaded with clothes, to increase perspiration; but this is not done in other cases. With respect to the bed-clothes, we have formerly said that they should be light, that the person may not be heated while asleep, as this is extremely weakening. It is also important that there be no curtains to the bed, or at least that they be kept closely tied up during the night. Nothing is more prejudicial to strengthening and healthful sleep than close curtains.

Whoever has studied the art of training must have often remarked, that the increase of strength, or the increase of weakness, though much influenced by what is taken into the stomach, and by its powers of digestion, yet a great deal depends on the management of the skin: and unless that is properly attended to, your training may all go for nothing. The stomach and bowels may be in healthful order, your wind may be sound, and your lungs playing and fluttering as freely as an aspen leaf, and yet may your skin, by improper management, soon throw the whole into disorder. Recollect for a moment, that nearly two-thirds of all that you eat and drink passes off by the skin, and you will at once see the importance of keeping the pores open, and taking care not to stop or impede the free passage of perspiration. The subject is so extensive, that we easily could, and perhaps may, write a volume upon it. In the mean time, we must be contented with a few practical remarks, as applicable to training.

In order to keep the pores of the skin free to admit the escape of the perspiration, it is indispensable that it be kept clean, and purged of all the greasy scurf which naturally collects upon its surface. We should, therefore, recommend that the whole body be carefully washed, at least once a week, taking care to let this be done as speedily as possible, to prevent the bad effects of cold. Water somewhat warm, is the best for cleaning the skin thoroughly; and to prevent its opening the pores too much, it ought to be immediately followed up by a second wash of the coldest water that can be procured, or a plunge into the cold bath. Fewterell, who was of the old school, prohibits the use of soap in these washings; why, he does not inform us. We can see no harm, but the contrary, in the moderate use of soap; though it does act injuriously, as we have seen, on the delicate skins of fine ladies. Soap, however, may be abused; for it may strip the skin of too much of its natural oil, and, by thus rendering it too dry, it may obstruct the pores, and stop perspiration. The cold bath is recommended by Jackson, three times a week; and he very properly prefers sea bathing to fresh water bathing. But if it is inconvenient to go to the sea side, a quantity of salt thrown into the cold bath will render it better. The use of the salt is to smart and stimulate the skin, and consequently to open its pores.—Jackson says, that the shorter time a person remains in the water the better; and we believe this agrees with experience, though we are not quite clear about the philosophy of the thing. Fewterell recommends the arms and loins to be washed with cold water. We should object to the loins, as likely to cause colic and other evils, except when the whole body is washed at the same time, which diminishes the hazard of this occurrence. Jackson again informs us, that it is of great advantage to prevent colds, to have the feet bathed in cold water every morning. This we should, for the same reason, disapprove of, except in the case of a general bath; or if it is done, we should say that the feet ought to be suddenly plunged into the cold water, and as suddenly withdrawn, and instantly rubbed dry.

Friction in Training.—This is a point in which we think the ancient Athletæ excelled the modern trainers. In training race horses, indeed, it is much better understood and more employed than in the more important training of men. On the principles just laid down, we say, that if you rub the skin till it glow, you will stimulate the pores into healthy action, and also draw to the part rubbed a great quantity of blood, as you will see by the increased redness of the part. Now all the perspiration must come from the blood; and consequently, if you both open the pores of the skin and bring thither a greater flow of blood, you will, to a certainty, increase the perspiration—and, of course, reduce your fat, and improve your wind.

The only friction mentioned by Jackson is performed after hard exercise, and particularly after the morning run, when he recommends the skin to be rubbed dry, and immediately clothed, one limb after another. We should advise the daily use of the flesh-brush, for not less than a quarter of an hour, morning and evening. Nothing acts more powerfully on the wind, and on the process of digestion.

Abstinence and Continence in Training.—We have already adverted to the necessity for strict abstinence from all excess and indulgence of the appetite, in food and liquor. It is even more important that, if the person under training is married, he should sleep out of his own house; and if unmarried, must submit to a similar precaution. This is the judicious precept of John Hall, of Beverly; and we believe it is followed by Jackson and Capt. Barclay. The ancients were also well aware of its importance; hence the verse of the Roman poet, respecting the man who wished to excel in the race—"*abstinuit Venere et Baccho*"—he quite renounced both love and wine.

Although, as observed, the principal thing to be attended to in training depends upon *sweating*, *exercise*, and *feeding*, yet the object to be obtained would be defeated if these were not adjusted, each to the other, and to the constitution of the individual, with which the trainer should make himself perfectly acquainted. If a man retains his health and spirits during the process of training, improves in wind, and increases in strength, it is certain the object will be secured. But if otherwise, it is to be apprehended that some corporeal defect exists, through the want of skill or management of the trainer, and which ought immediately to be attended to by making such alterations as the nature of the circumstances may demand. Hence it is evident, in many instances, that the trainer must be guided by his judgment, and that no fixed rules, with any degree of certainty, are within his control. It is impossible to fix any precise period for the completion of the training process, since much will depend on the previous condition of the person to be trained; but from two to three months, generally will be found sufficient, with anything like condition at the commencement, and a cheerful and regular adherence to the prescribed rules. Sir John Sinclair observes, that, "Training always appears to improve the state of the lungs. One of the most striking effects of it is, to improve the wind; that is, it enables a man to draw a larger inspiration, and to hold his breath longer." He likewise adds, that, "By training the mental faculties are also improved; the attention is more ready, and the perception more acute, probably owing to the clearness of the stomach, and better digestion."—See *Code of Health*, vol. ii, p. 103.

The question has been agitated, whether training produces a permanent, or only a temporary effect on the constitution? It may be answered, that if a man be brought to a better habit of body, and the function of respiration, and corporeal vigour, be improved by it, such a state of health will unquestionably exist, until derangement supervene, either from accidental or natural causes. If, for instance, he should relapse into irregular habits, neglect the means of preserving his health by omitting to take the regular exercise, or by indulging in excesses of any kind, then must it be expected that such inroads made upon the constitution must eventually dilapidate the system. But, on the other hand, by an adherence to the training plan, its good effects will be experienced, until the gradual decay of the natural functions ease him down gently, not violently, to the grave: consequently, it may be admitted that the benefits arising both to body and mind from a judicious and well-conducted process of training, are not merely of an evanescent nature, but that they may be made permanent by proper care and attention.

Simplicity in the rules of training is certainly a strong recommendation to those desirous of submitting to the experiment; and the whole process may be illustrated on the following principles:—

1. Evacuation, which cleanses the stomach and alimentary canal.

2. Sweating (see *Perspiration*), which removes the superfluities of flesh and fat.

3. Exercise, which improves the respiratory organs, vulgarly called the "wind," strengthens the muscular system, and gives tone, vigour, and elasticity to the whole frame.

4. Diet and regimen, which nourish and support the whole.

Add to these the influences of air, sleep, and passions of the mind, and their regulation, and the whole philosophy of training may be embraced at a single glance.

The criterion to go by, in order to ascertain whether a person has been properly trained, is the state of the skin,* which becomes smooth, tense,

* In directing the attention to the excretions of the body, the sympathy existing between the skin and the stomach ought not to be overlooked. If the vessels of the skin, for instance, be universally excited, and this excitation be long continued, they will at length fall into a state of indirect debility,

elastic, and clear-coloured. The flesh is also firm, and the individual feels himself light, and full of spirits; though, in the progress of training, the condition of the man may be ascertained by the effects of the sweats, which cease to reduce his weight; and by the manner in which he performs one mile at the top of his speed. "It is as difficult to run a mile at the top of one's speed, as to walk a hundred;" and, therefore, if he performs this short distance well, it may be concluded that his condition is perfect, or that he has derived all the advantages which can possibly result from the training process.* On the principles of training here laid down, those applicable to convalescents and valetudinarians may be modified, and the diet, exercise, sleep, and other non-naturals, regulated by consulting the different articles relating thereto, under their respective heads.

whence a sense of faintness, loss of appetite, and inability to digest solid food, will be experienced; a fact, explaining the diminished appetite of which persons complain in hot weather, and that universal custom in tropical climates, of combining the food with large quantities of aromatic stimulants. One of the most striking instances indicative of this concert between the skin and the stomach is to be met with in cases where cold or wet has been applied to the lower extremities; often producing vomiting, &c.

* The manner in which horse-jockeys are trained differs from that applicable to pedestrians and pugilists. As regards jockeys, the object is to reduce their weight, upon the wasting system, by means of purgatives, emetics, sudorifics, and low diet. Their bodily strength is of little importance, as they have only to manage the reins of the racer, whose fleetness depends upon the weight he carries; and the muscular power of the rider is of no consequence to the race, provided it be equal to the fatigue of a three or four-mile heat. Training for pugilism is nearly the same as for pedestrianism, the object in both being principally to obtain additonal wind and strength; hence training for health and a good condition of body is the same, according to constitution; the whole being founded on the due regulation of the non-naturals.

TREACLE *(Molasses)*. — A very impure refuse of sugar, from which it drips, though it is susceptible of being employed in a new ebullition, by which a second quantity of sugar may be obtained from it. The remainder of the molasses is employed to yield rum by distillation. The French prepare from the mixture of molasses with water, a species of wine of good quality. In its preparation, the solution is brought into fermentation, then passed through strainers to purify it, then put into casks; and after clearing it in these, transferred into others, in which it is to be preserved for use.—See *Sugar*.

TREACLE, VENICE.—A composition which originally consisted of but few ingredients; namely, twenty leaves of rue, two walnuts, two figs, and a little salt. It is named Mithridatium, after Mithridates king of Pontus, who experiencing the virtues of the simples separately, afterwards combined them. Of the above preparation Mithridates, we are informed, took a dose every morning, to guard himself against the effects of poison. A preparation resembling it is still made at Apothecaries' Hall, though seldom used. There are, however, some physicians of the present day who prescribe it, in the dose of from ten grains to a scruple, against nervous irritations.

TROPÆOLUM MAJUS. — The systematic name of the Indian cress, greater Indian cress, or nasturtium. This plant is a native of Peru: it was first carried to France in 1684, and there called the *Grand Capucin.* In its recent state, and more especially its flowers, it has a smell and taste resembling those of water-cress; and the leaves on being bruised in a mortar, emit a pungent odour, somewhat like that of horse-radish. By distillation with water they impregnate the fluid in a considerable degree with the smell and flavour of the plant. Hence the antiscorbutic character of the nasturtium seems to be well founded, at least, at far as may be judged from its sensible qualities : consequently, in all those cases where the warm and antiscorbutic vegetables are recommended, this plant may be occasionally adopted as a pleasant and effectual variety. Persons to whom the nauseous taste of scurvy grass is intolerable, may find a grateful substitute in the nasturtium. The flowers are frequently used in salad, and the capsules are by many esteemed as a pickle. The flowers in the warm summer months, about the time of sunset, have been observed to emit sparks like those of the electrical kind.

TROPHIS AMERICANA.—Red-fruited Bucephalon. The fruit of the plant is a rough red berry, eaten in Jamaica, though not very pleasant.

TROUT.*—A well known delicious fresh water fish, and used at the daintiest tables ; it is covered with small scales, usually streaked with red according to the line :—

Purpureisque solar stellatis tergora guttis.

The river trout comes into season in April, and continues till July. Those caught near Uxbridge come to London quite alive. The salmon trout is more valued for the delicacy of its flavour than any other species. In summer the trout is more delicions than at any other time. There are several sorts of trout, which differ according to the places they inhabit, both in colour and magnitude ; some are found in deep and rapid rivers, others in lakes ; some are of a blackish colour, others redish or rather of a gold colour, which made it be called in latin *auratæ.*

The trout supplies good chyle, digests easily, and possesses aphrodisiac properties ; but it easily corrupts and becomes putrid, consequently should be eaten as soon as possible after it is taken out of the water. It contains much oil, volatile salt, and phlegm. In summer time it agrees with any age or constitution. There is another kind of trout, rather different from the others of the same species, which in Latin is called thymallus, or thyme arbore, because it smells like thyme ; it is delicious eating, easy of digestion, has good juice, and so nutritiously wholesome that it is frequently allowed to the sick. In shape it resembles the common trout, and equally lives in clear and running waters ; it feeds also on the same food, and in some places is more valued, from the goodness of its taste, than the other sorts of trout, Its fat is said to possess the following medicinal properties, namely, to remove the prints of the small-pox, deafness, and "drummings of the ear, specks and catarrhs of the eye." —See *Salmo.*

TRUFFLES.—The truffle of the mushroom, is a species of fungus common in France and Italy, growing generally about eight or ten inches below the surface of the ground. As it imparts a most delicious flavour it is much used in cookery. When dug out of the earth, it requires a great deal of washing and picking before it can be applied to culinary purposes. When washed, the water should be warm, and frequently changed. Truffles lose much of their flavour when dried.—See *Mushroom.*

TUBEROSE. —*Tuberous:* Knobbed ; applied to parts of plants. The root so called is of many kinds. The most genuine consists of fleshy knobs, various in form, connected by com-

* The etymology of trout is thus given by Lemery, a French writer on foods. "A trout, in latin, is called *trutta,* a trudendo, quasi trusilis ; being so much as to say, forcing its way, because it many times swims against the current of the water, and forces the waves strangely."

mon stalks and fibres; as the potatoe, and Jerusalem artichoke.

TUBULOUS,—*Tubular.* A leaf is so called which is hollow within, as that of the common onion.

TUNNY.—A large and thick sea fish, abounding on the coasts of the Mediterranean, where it is caught and pickled. It is firm, crisp, and of an excellent taste. The most delicious part of the fish is the lower belly. They are sometimes, however, too fat, are difficult of digestion, and relax and weaken the fibres of the stomach; consequently those parts that are not so loaded with fat are to be preferred for their wholesomeness though they are not so well tasted as the other. It is usually eaten in winter and autumn, and agrees with young, bilious, and sanguine people, who have a strong stomach, and are in the habit of taking much exercise.

TURBOT *(Pleuronectes Maximus,* order *Thoracici)*.—This delicious fish is in season the greatest part of the summer. When good, it is at once firm and tender, and abounds with rich gelatinous nutriment. M. Ude says that he has ascertained by many years' observation, that a turbot kept too or three days is much better eating than a fresh one. It inhabits the European and Mediterranean seas. It is a finely flavoured fish when in season. The flesh is firm, and easy of digestion. It sometimes grows to the weight of thirty pounds. Rondelet says he has seen turbots five fathoms long, four in breadth, and a foot thick.*

The finest turbots brought to the London market are caught off the Dutch coast, or German Ocean, and are brought hither in well-boats alive. The commencement of the season is generally about March and April, and continues all the summer. Like other fish, turbots do not spawn all at the same time; there is, therefore, always good and bad all the year round. For these some years past, there has been an immense quantity brought to London, from all parts, and of all qualities. A great many from a new fishery off Hartlepool, which are very handsome looking fish, but by no means equal to those caught on the Dutch coast. Many excellent turbots are caught off Dover and Dungeness; and a large quantity brought from Scotland, packed in ice, which are of a very inferior quality; and are generally to be purchased for about one-fourth of the sum given for good turbots.

Being drawn and washed clean, if it be quite fresh, and kept in a cool place, it may, in moderate weather, be preserved for a couple of days. An hour or two before dressing it, soak in spring water with some salt in it,—then score the skin across the thickest part of the back, to prevent breaking on the breast, which will happen from the fish swelling and cracking the skin, if this prevention be omitted. The thickest part of the turbot is the favourite; and the carver of this fish must remember to ask his friends if they are *fin-fanciers*. It will save a troublesome job to the

* Juvenal, in his fourth Satire, gives us some idea of the value the ancients set upon a turbot (called in Latin *Rhombus*, from its being large, flat, and resembling a lozenge), by the following humorous interlude of Domitian the emperor, who one day convoked the senate to know in what fish-kettle they should cook a monstrous turbot which had been presented to him. The senators gravely weighed the matter; but as there was no utensil of this kind big enough, it was proposed to cut it in pieces: this advice was rejected. After much argument and deliberation, it was resolved that a proper utensil should be made for the purpose; and it was moreover decided that, whenever the emperor went to war, a great number of potters should accompany him. The most pleasing part of the story is, that a blind senator appeared to be in ecstasy at the sight of the turbot, by continually praising it, at the same time looking in the very opposite direction!

carver, if the cook, when the fish is boiled, will cut the spine bone across the middle.—See *Fish to Carve.*

TURKEY.—Turkeys were first introduced into Europe from Mexico or Yucatan, and imported into England, probably from Spain, as early as the year 1524. Since that period they have been successfully reared in this kingdom; so that in 1585 they made a dish even at our rural feasts. But in France they were so rare, that the first eaten in that country appeared at the nuptial feast of Charles XI. in 1570. The largest Turkeys in England are reared in the county of Norfolk. Some of them weigh upwards of 30 lbs. when prepared for dressing. Those that are young, tender, fat, and well fed, are the best.

TURNIPS.—(*Brassica Rapa*).—These roots were brought into this country from Hanover; they are now much cultivated as food for cattle. Turnips are nutritive, but flatulent, and not easy of digestion; they become still more indigestible when of a large size and long preserved in cellars. The least flatulent and most nourishing of these roots are the long kind, or Swedish turnip, introduced some years ago into this country.

TURTLES. (See *Tortoise*).—In some countries the turtle is esteemed a delicate dish, and yet, as they contain a large portion of fat, the stomach cannot easily digest them without the addition of much salt. The same observation applies to the legs of frogs of a certain species, which are also considered as an epicurean dish with our Continental neighbours; also the West Indian guana, a species of lizard, two or three feet long, of a most forbidding appearance; but its flesh is delicate and salubrious, much resembling that of a chicken. Turtle soup is light and highly nutritive, and forms a prominent and very desirable and proverbial dish at our civic feasts. "The usual allowance (of turtle soup) at a turtle feast, is six pounds live weight per head: at the Spanish dinner at the City of London tavern, in August, 1808, 400 guests attended, and 2,500 lbs. of turtle were consumed."—See *Bell's Weekly Messenger, August* 7, 1803.

TURTLE-DOVE.—Another and finer kind of pigeon than either the ring-dove or tame pigeon: the cock is usually of an ash colour, with a black ring round his neck: there are also some of them white, especially in cold countries. The flesh of the turtle-dove is not so dry as that of the wild pigeon. It is better tasted, and produces good juice: when this bird is fat, tender, and young, it constitutes a delicate food, and is what the poet Martial says of it:—

> Dum mihi pinguis eris turtur, lactuca val bis, et cochleas tibi habe; perdere nolo famem.

Galen also extols the goodness of the turtle, and says, that it is of a food neither too gross nor too slight, and in a word very wholesome.—See *Pigeons, Ring-Dove.*

TYRE.—A composition of butter-milk and milk: made by adding a little butter-milk to warm fresh milk, and letting it stand all night. It is much used in India, being eaten with rice; it is slightly acid and laxative; it is also churned for butter.

U.

USQUEBAUGH.—The Irish for mad-water. Originally the pure spirit called whisky, a term obtained from usquebaugh. The usquebaugh of the present day is a strong, rich, compound spirit, chiefly taken as a dram, and made of cinnamon, coriander, nutmeg, mace, aniseed, citron, thyme, balm, savory, mint, rosemary, Spanish liquorice, sugar candy, raisins, currants, and dates, infused in brandy.

V.

VALERIAN.—The root of this plant is antispasmodic and tonic; and is sometimes highly beneficial in those diseases which appear to be connected with a morbid susceptibility of the nervous system, as in hysterics, pain of one side of the head, and in some species of epilepsy; it is of service also in some cases of hypochondriasis, or lowness of spirits, and may often be advantageously combined with Peruvian bark. Its great disadvantage is its smell and taste: the aroma arising from it pervades the whole body, and seems to be carried off by perspiration; this is an insuperable objection to it in the higher ranks of life, and less than a drachm to a dose does no good. In one kind of epilepsy it more particularly does good, that is, where it is symptomatic of an affection of the stomach, which is common to young people from excess in eating and drinking; when thus the stomach loses its tone, it is relieved by a large dose of Valerian, conjoined with ipecacuanha: *e. g.*

Take Valerian in powder, 1 dr.
Ipecacuanha - - 1 gr.

Make a powder, to be taken three or four times a day, out of any convenient vehicle, as wine, water, &c. It is very nauseous, but when thus taken largely, it is highly beneficial in palsy, especially when it arises from mere nervous weakness.

A strong infusion of the root, joined with the tincture, answers as well as the powder. Thus—

Take Valerian root - 6 drs.
Horse-radish - 3 drs.
Water - - - 1 pint.

Boil down to ten ounces, and strain; then take

The strained liquor - 1½ oz.
Carbonate of ammonia 6 grs.
Valerian in powder - 20 grs.
Syrup of saffron - - ½ dr.

Make a draught, to be taken every fourth or sixth hour.

The ammoniated tincture of valerian is an elegant and efficacious cordial and antispasmodic, of great benefit to the nervous and low spirited. The dose is from one to two or three tea-spoonsful, twice a day in water.

Sir John Pringle found an infusion of valerian keep meat better than sea salt, or an infusion of bark; hence he regarded it as more antiseptic; but this is not to be admitted, as the action of medicines on living matter is different from chemical action.—See *Stomachics.*

VANILLA.—The pod of the *Epidendron*, (L.): growing in Cayenne, and some parts of Spanish America. The largest pods are sometimes six inches long, and almost triangular, soft, oleaginous, externally of the appearance of leather, and internally filled with a dark brown pulp, in which we find a great number of small black or brownish red and shining seeds. These have a pungent aromatic and oily taste, and a strong balsamic odour, much resembling that of the Peruvian balsam. A small proportion of these seeds—for instance, a grain to an ounce—is sufficient to impart to chocolate the very agreeable flavour which we generally meet with in that imported from Spain. Vanilla is warming, resolvent, strengthening to the stomach, and a remedy for flatulency. In chocolate it assists the digestion of the oily substance of the cacao.

VANNER.—In cookery. To turn up sauce, or other liquid, in a spoon, and turn it quickly over.

VEAL. The flesh of calves.—Veal, in a dietetical point of consideration, is tender and nourishing; but not so easily digested, nor so well suited to weak stomachs as is commonly imagined. It is matter of just complaint, that the same injurious methods are practised in the rearing and management of calves, as have been already noticed with regard to lambs. By such treatment the quality of the meat is much depraved. Although veal affords less nourishment than the flesh of the same animal in a state of maturity, it contains many nutritious and earthy particles, and produces little or no disposition to flatulency: it ought not, however, to be exposed in the market, till the calf is at least six weeks old, and have been fed, if possible, on the mother's milk. Veal is not of a heating nature, and may therefore be allowed to febrile patients in a very weak state, especially with the addition of some acid: it is also the most proper food for persons who have a disposition to hemorrhage. On account of the great proportion of viscidity it contains, persons disposed to phlegm and complaints of the abdomen, ought to abstain from its use. For these reasons, veal-broth is recommended, especially in pectoral and inflammatory diseases.

The lungs, the liver, and tongue of calves, are less viscous than the flesh; and being soft, mild, and easily digested, they are very proper for sick persons and convalescents. No animal fat is lighter than this: it shews the least disposition to putrescency; and it may therefore be used, in preference to any other, by persons of a scorbutic taint. The fat of veal should not be boiled, as that operation softens its fibres too much, dissolves the jelly, and renders it unfit for digestion. But, by roasting, it becomes drier, and somewhat more solid; both the serous and thick parts of the blood are incrassated in the external vessels, the fibres are dried up, and a crust is formed, beneath which the fluids are moved, and changed into a vapour, by the continued application of heat. In this operation all the fibres lie, as it were in a vapour bath, and are perfectly softened without losing any of the jelly. Roasting, therefore, may be considered as the best mode of preparing this meat for the table. Baking also forms a crust over it like roasting, but the fat incrassated by heat may occasion inconvenience, as it possesses an oily acrimony, and is with difficulty digested. — See *Training*.

For the above reason, it is improper to eat the burnt crust of any meat, of which some persons are particularly fond, though it contains an empyreumatic oil, highly pernicious, and altogether indigestible. For roasting, the mellow and juicy kidney piece, or the breast of veal, deserves the preference: the leg is too dry and fibrous; it requires good teeth to be well chewed, renders their use more necessary than any other dish, and is frequently troublesome to the stomach. In short, veal does not agree well with weak and indolent stomachs, which require to be exercised with a firmer species of meat. When boiled it is but slightly nourishing; and when we make a meal upon veal alone, we soon feel a renewal of the cravings of the appetite. For removing the acid from the stomach, veal is the most improper article of diet. But to patients just recovering from sickness, first may be given veal-broth, then roasted veal, and lastly, beef. — See *Veal*, under *Butcher's Meat to choose*.

VEGETABLES. — A substance endowed with life, partly or wholly fixed within the earth, and which derives its nutriment from vessels in the outer surface of the roots. Vegetables form one of the three great divisions of nature. The most striking difference between animals and vegetables is, that the former are in general capable of conveying themselves from place to place; whereas, the latter, being fixed in the same place, absorb, by means of their roots and leaves, such support as is within their reach. All plants appear to require for their support water, earth, light, and air. Various experiments have been instituted, to shew that water is the only aliment which the root attracts from the soil. The same quantity of water is not requisite for all plants; those that transpire little, do not stand in need of any considerable quantity of this fluid, and accordingly they are fixed upon dry rocks—for example, the mosses and lichens. The leaves of vegetables have likewise the property of absorbing water, and of extracting from the atmosphere the same principle which the root draws from the earth. But water plants, that is, such as live in the water, have no need of roots; they receive the fluid at all their pores. Dung mixed with earths and decomposed, not only affords the alimentary principles spoken of, but likewise favours the growth of the plant by that constant and steady heat which its farther decomposition produces. Light is almost indispensable to plants. In the dark they grow pale, languish, and die.

One of the principal advantages resulting to Europe, from exploring distant regions, has been the introduction of some of the most useful plants and fruits that are now cultivated with so much advantage. From the discovery of America, one of the most important benefits perhaps that we have received, was the introduction of the potato; a root by far the most useful of all that we have among us. The pear, the peach, the apricot, and the quince (which see), were respectively brought from Epirus, Carthage, America, and Syria. They were first transplanted into Italy; and thence disseminated by the Romans, through the northern and western parts of Europe. Fruit, says Andrews (*Hist. Eng.*), seems to have been very scarce in England, in the time of Henry VII. In an original MS. signed by himself, and kept in the Remembrance-office, it appears that apples were paid for, not less than one or two shillings a piece; that a red rose cost two shillings; and that a man and woman had eight shillings and fourpence for a few strawberries. It was not till the latter end of the reign of Henry VIII. (1547), that any salad, carrots, or cabbage, or other edible roots, were produced in England. The little of these vegetables that was used, were formerly imported from Holland and Flanders. Queen Catherine (Henry's first consort), when she wanted a salad, was obliged to dispatch a messenger thither on purpose.

Sundry other kinds of fruit and plants were also first cultivated in England during the reign of the Eighth Henry, particularly apricots, artichokes, pippins, and gooseberries. The latter are said to have been brought from Flanders. The currant tree was conveyed from Zante, by the Venetians, and planted in England in the year 1533. Asparagus, beans, peas, and cauliflowers, were introduced about the time of Charles the Second's restoration (1660).—Cabbages were introduced into Scotland by the soldiers of Cromwell's army. The delightful ornaments of our gardens, the most beautiful and fragrant flowers, are also foreign productions. For instance, among others, the jessamine came from the East Indies; the tulip, the lily, and several others from the Levant; the tuberose from Java and Ceylon the carnation and pink from Italy; and the auricula from Switzerland. The modern taste for flowers, came, it is said, from Persia to Constantinople, and was imported thence to Europe, for the first time, in the sixteenth century. At any rate, we find that the greater part of the productions of our flower gardens were conveyed by that channel.—

(*Beckman's Hist. of Inventions*).—With what goodness, observes the pious Sturm, does God thus provide for our happiness and enjoyments, by making even the most remote countries contribute to them. Let it moreover be considered, that nuts, acorns, crabs, and a few wild berries, were almost all the variety of vegetable food indigenous to our island. The meanest labourer, as Dr. Aiken justly remarks, is now fed with more wholesome and delicate aliments than the petty kings of the country could obtain when in its uncultivated state.

VEGETABLE ACIDS.—There are reckoned at present among chemists upwards of twenty vegetable acids, though but few of these are met with in common articles of vegetable food. They appear to be more refreshing to the system than affording much real nourishment; which, when it is observed to take place, may perhaps be more justly referred to the other principles with which it is combined. For instance, in the orange and apple, the acid is combined with sugar and mucilage; and in sowans, or flummery, and starch-maker's water, in which it is combined with starch and gluten.—See *Acids, Vegetable.*

VEGETABLE ALIMENT. — Vegetable food is more ancient than any other species of aliment. As constituting the food of animals, vegetables are the foundation of all our nourishment, for through this means animals are nourished, which in their turn afford nutriment to man. There are indeed no circumstances under which animal food should be solely used. This has been confirmed by every rational experiment hitherto made; and a person confined only for a few days to this mode of living, has brought on such diseased action as to have obliged him to desist. Independent of this, by stimulating to an extreme degree by animal diet, the springs of life are urged on too fast and preternaturally, and of course weakening exertions of the system ensue, which, from their excess, induce early decay. Thus childhood is prematurely ushered by it into manhood; and the powers of manhood, soon exhausted, display the infirmities and progress of age, at a period when vigour and strength should still be in perfection. A diet of vegetable food, on the contrary, is conducive to long life: it neither accelerates the vital energy, nor ripens the fruit before its time; but with a slow and regular step, brings forward the different stages in due season, and with all the advantages which their proper maturity ought to confer upon them. At the same time, while the good effects of a vegetable diet are pointed out, in arresting the progress of life, and giving a greater permanence to existence, we by no means approve of it as a diet to be entirely trusted to.

On the exclusive use of a vegetable diet, declaimers against it have not taken into view the various and new circumstances of situation in which man is now placed. He is no longer the child of nature, nor the passive inhabitant of one genial spot, as when he was first formed. He is now a citizen of the world at large; exertion and toil are his constant attendants, and he requires a more ready and assimilated nourishment than vegetable food can convey. In many situations, alas! the vigour of his system is weakened by extremes of temperature, which demand, to counteract them, the most stimulant and invigorating food he is capable of acquiring. The excellence of vegetable food, therefore, used alone, is confined to mild temperature, and a passive state, and then it certainly deserves that preference which humanity and philosophy have bestowed upon it.

Vegetable food, considered as conveying a nourishment insufficient for our present civilised state, it may not be irrelevant here to make some remarks on the inconvenience consequent upon its being used in excess. The first inconvenience of the aliment under consideration is, its constant tendency to ascescency; but this is hurtful only when it takes place to a morbid degree. If a natural tendency to ascescency prevails in the stomach, as a step towards assimilation, it cannot fail to be noxiously increased by the sole use of vegetables; and the counteracting of this state, or checking the tendency to fermentation, must be the great secret in the regulation of vegetable diet. This secret, no doubt, depends upon the preventing, by our choice of vegetables, excess in the proportion of the fermentable or saccharine matter, and in exciting the action of the stomach, so that the vegetable food may not be too long retained upon it.

The next inconvenience alleged against vegetable diet is, its difficulty of assimilation. That vegetable aliment is more difficult in being reduced to nourishment seems generally admitted, and in the end produces a greater quantity of fæces. When received into the stomach, it is likewise superficially lighter than the gastric fluids; hence it floats near the top of the stomach, and causes eructations. This uneasiness is not felt for some time after its reception, but it soon begins to operate in the upper orifice of the stomach. This difficulty of assimilation in vegetable food may, however, be got the better of, by a proper selection of it, and it will also be chiefly felt in weak stomachs, but will by no means affect the vigorous and robust.

A third inconvenience attending a vegetable regimen is, its extrication of a considerable quantity of air, by which the stomach becomes distended often to an enormous degree, and much uneasiness is produced in the adjacent organs. The extrication of air is common to all vegetables; it varies, nevertheless, extremely, in different kinds of them, and it is from this circumstance that the flatulency and torpor is experienced which succeeds a full meal of them. Hence all vegetables that contain much of it should undergo a previous preparation before being used as food. These are the principal inconveniences attending a vegetable regimen; while, on the contrary, to counterbalance them, this species of diet is always found to promote or sharpen the appetite, and to keep the stomach in an active state. Neither are any constitutional disorders the consequence of it, as happens from animal food; for whatever morbid symptoms arise under its use, they are confined almost exclusively to the stomach and bowels, and seldom carry any hurtful effects into the system at large; neither do any evils arise from occasional excesses in its use, and the mischiefs of repletion, or even fulness, are avoided by it, unless in cases of extreme indolence, or where a continued course of intemperance is pursued, as regards the quantity taken: by its moderate stimulus, it counteracts the disposition to an inflammatory state, and, in many cases, proves highly serviceable in checking the violence, and arresting the progress of several constitutional diseases. Independently of its nature, it is of great importance to the stomach, by giving that proper distension which this organ requires, in order to its healthy action.

The wisdom of nature has provided that the extent of vegetable food should be much greater than of animal food, as the former is the foundation of nourishment for all the animated creation. Hence we find that there is scarcely any vegetable that does not afford nourishment to some animal, and there are many which, though naturally of a deleterious quality, can, by proper preparation, be converted into nourishment for man. Those vegetables that are of a mild, bland, agreeable taste are proper nourishment, while those of an acrid, bitter, nauseous nature are improper. We use, indeed, several acrid substances as food, but the mild, the bland, and the agreeable are in largest proportion in almost every vegetable: such as are acrid, and at the same time of an aromatic nature, are not used as food, but as spices or drugs, which answer the purpose of medicines, rather than any thing else. Although not unfrequently acrid and bitter vegetables are admitted as food; for instance, celery and endive are used in common food, though both are substances of considerable acrimony; but it must be observed, that when we use them, they are previously blanched, which almost totally destroys their acrimony; or if we employ other acrid substances, we generally, in a great measure, deprive them of their acrimony by boiling.

In different countries, the same plants grow with different degrees of acrimony. Garlic, for example, seldom, in this country, enters one's food; but in the southern countries, where this plant grows more mild, it is frequently used. The plant which furnishes Cassada, which in its viant state is of a very acrimonious and poisonous nature, affords an instance of the necessity of preparing acrid substances, even in the hot countries, and there are other plants, such as *wake-robin*, which, in their natural state, are so acrimonious, that they cannot be swallowed with safety, yet, when deprived of that acrimony by boiling, afford good nourishment.

Vegetable and Animal Food, differences between.—Vegetable differs from animal food in several respects.

1*st.* It has a greater tendency to acidity, whilst animal food of all kinds inclines more to alkalescency and putrefaction.

2*nd.* With regard to their difference of solution in the stomach, heaviness, is seldom felt from vegetables, except from farinaceous paste, or the most viscid substances; while heaviness from animal food is more frequently noticed, especially when taken in any great quantity.

3*rd.* With regard to mixture, there is no instance of difficult mixture in vegetables, except in vegetable oils; while in animal food especially, the fatter meats, both from viscidity and oiliness, are in this respect refractory.

4*th.* When the putrescency of animal food has proceeded too far, it produces an active stimulus, causing diarrhœa, dysentery, &c. These effects, however, are of rare occurrence, whereas from vegetable food and its acid, which, united with bile, proves a pretty strong stimulus, they more frequently occur; however, they are of less consequence, if the degree of refrigeration be not very great.

5*th.* Wherever neither putrefaction nor acidity have gone to any great length, animal food keeps the belly more regular.

6*th.* Vegetable food gives a greater proportion of succulent matter, and when exsiccated by the stomach and intestines, is more apt to stagnate, and produce slow-belly and costiveness, than stimulating animal food, which before it reaches the large intestines, where stoppage is made, it has obtained a putrefactive tendency, and gives a proper stimulus: thus, those who are costive from the use of vegetables, when they return to animal food, are considerably ameliorated in their natural bodily health.

Exclusive of the foregoing observations, it is pretty generally known, that animal food is considerably more nutritive than vegetable, although they both produce a blood of the same kind, but different in quality. The former affords a more dense, stimulating elastic blood than the latter which stretches, and causes a greater degree of resistance in the solids, as well as excites them to stronger actions; and in autumn, when there is a tendency to dysentery if it be observed that eating of fruits brings it on, it is rather to be ascribed to their cooling than to their stimulating the intestines.

Quantity of Nutriment afforded by Animal and Vegetable Food.—With respect to the quantity of nutriment contained in or afforded by animal vegetable food, it is of two kinds. The first repairs the waste of the solid fibres: the other supplies certain fluids, the chief of which is oil. Now as animal food is more easily assimilated, and also longer retained in the system, and as it contains a greater proportion of oil, it will afford both kinds of nutriment more copiously than vegetables. The different degrees of perspirability of these foods are not yet properly determined. Sanctorius, who first called the attention of physicians to the transpiration of the skin and lungs, which he proved to exceed the other secretions of the body considerably in weight, constantly speaks of mutton as the most perspirable of all food, and of vegetables as checking perspiration. This, it would appear, is in consequence of the different stimulus those foods give to the stomach, so that persons who live on vegetables have not their perspiration so suddenly excited. Another reason why vegetables are less perspirable is, because their watery saline juices are determined to the kidneys and passed off by urine, while the more perfectly mixed animal food is more uniformly diffused over the system, and so passes off by perspiration. For these reasons, the statements of Sanctorius may be understood, for vegetable aliment is no longer retained in the body, but mostly takes the course of the kidneys. Both, however, in this respect are equally perspirable; as it is ascertained, that a person living on either, returns once a day to his standard weight; and if we consider the little nourishment contained in vegetables, with the great tendency of animal food to corpulency, it must be allowed that vegetables are more quickly perspired than animal food.

Among the various other properties of vegetable food, it has been especially considered by all authors, as having most influence on the powers of the mind, and in preserving a delicacy effecting a liveliness of imagination, and an activeness of judgment; but in proportion to those superior qualities, it must be observed, that this state of the body is equally the attendant of timidity, fluctuation and doubt: animal food, in the other extreme, gives a stronger vigour, and firmness of purpose, fitted for the most active exertions in life. By a mixture of diet, these two extremes come to be counteracted; the body possesses a proper share of vigour, and correspondent to this, the mind displays a firmness and capacity suited to every valuable purpose; the diet then producing this state may properly be called temperance, without limiting the individual to an exact portion of either kind of food, or tying him up by the absurd and sickly system of Cornaro; and this state will be properly regulated by the experience and feelings of each individual, both in regard to the quantity and quality of nourishment. In the use of vegetable, as well as animal food, attention should be equally paid to the proportion taken, as to the state in which it is used; the fact is, therefore, that these must be regulated by the three circumstances—of season, way of life, and climate.

With respect to the first, in summer the quantity of vegetables should always be increased, whatever our habits may be; the propriety of this is evidently pointed out by Nature, from its abundance at this period.

The increase of vegetable food is also the more necessary, if the appetite be naturally keen and healthy, as a more strongly nourishing aliment would at this time expose to all the effects of putrescency, which the increase of the vegetable diet will on the contrary counteract. The habits of life must also regulate a good deal the proportion of vegetable nourishment: an essential circumstance in the use of all diet, is the production of such a distension of the stomach and bowels, as may enable them to act properly on their contents. In the sedentary and inactive, it is particularly desirable that this distension should be produced by food of a less nourishing kind; and that no more nourishment be received than the wants of the system require. Hence in these cases, a vegetable diet is to be preferred, while in the active and laborious the plan should be reversed.

It is a fact sufficiently established, that the proportion of vegetable food, should in a great measure be regulated by the climate; as there is little doubt, that the mortality of warm climates is aggravated by the too abundant use of animal food; and that a diet of a vegetable and ascescent nature, with a large proportion of condiment, such as we find used by the inhabitants of those countries, is best suited for the preservation of health; for, by this excess of condiment, the morbid effects on the stomach and bowels natural to vegetable food, are counteracted, and the chyle formed from them passes into the circulation in a proper state for supporting the body in such a situation. On the other hand, in a colder region, a permanence of nourishment is required, which animal food particularly conveys; and as this nourishment is less apt to disorder the stomach or bowels, no great portion of condiment is necessary, either as a stimulus to the organ, or in order to avoid any hurtful consequences that may arise. The proportion therefore of vegetable food is clearly pointed out to be small, and chiefly of the farinaceous, or least ascescent kind. The state also in which vegetable food is used, is of equal importance with the proportion of it taken; thus vegetable food particularly requires to be used in a fresh state—for, by being kept, many kinds of vegetables lose their peculiar flavour, taste, and smell, in consequence of which they become indigestible. This particularly is the case with the pulses, herbs, and roots.

VEGETABLES, CULINARY.—Though under this head no arrangement can be absolutely perfect, from the circumstance of some of the plants being used for different purposes, it will answer our object in the present instance, to give an alphabetical catalogue, and refer the reader to the individual under its proper head.

1. *Acetarious Plants or Salads*—comprehending all small salads, *e. g.* American cress, winter cress, dandelion, celery, lettuce, endive, succory, mustard, corn-salad, rape, garden cress, water cress, brook-lime, scurvy grass, garden rocket, burnet, buckthorn plantain (see *Plantain*), ox-eye-daisy, and others, as sorrel, sarragon, Indian cress, &c.

2. *Alliaceous Plants*, corresponding with the onion, leek, chives, garlick, shalot, and rocambole.

3. *Asparaginous Plants*, including asparagus, sea-kale, artichoke, cardoon, rampion, alexanders, hop, bladder-campion, cotton thistle, and milk thistle.

4. *Cabbage Tribe.* — The white and red cabbage, cabbage-colewort, savoy, Brussels sprouts, borecoles, or winter greens, cauliflowers, and brocolis.

5. *Fungi, British, edible.*—Comprehending the dulse, tangle, &c.

6. *Fungi, British, edible.*—Including the mushroom, truffle and morel.

7. *Plants, Leguminous, e. g.*—The pea, and kidney-bean.

8. *Plants, Spinaceous.* — Comprehending the garden spinage, Jerusalem artichoke, turnip, carrot, parsnep, red beet, skirret, scorsonera, salsify, and radish.

9. *Plants used in Preserves and Pickles.*—Comprehending love apple, egg plant, capsicum, caper, samphire, and the red cabbage. Indian cress, radish, kidney-bean, marsh marygold, &c.

10. *Plants used in Confectionery.*—Tarts, domestic medicine, including rhubarb, gourd, angelica, anise, coriander, caraway, rue, hyssop, chamomile, elecampane, liquorice, blessed thistle, wormwood, and some others.

11. *Pot Herbs and Garnishings.*—Comprehending parsley, purslane, tarragon, fennel, dill, chervil, horseradish, Indian cress, marygold, borage, and some others included above.

12. *Sweet Herbs,* as thyme, sage, clay, mint, balm, marjoram, savory, basil, rosemary, lavender, tansy, costmary, and some of those above enumerated—to which may also be added, such edible indigenous plants as are neglected, or not cultivated, including the sea-beet, nettle, sea-peas, and a variety of other natives.

VEGETABLE PRODUCTIONS, WHEN IN SEASON. — The following is a monthly view of the different vegetable roots, and sweet herbs, commonly called garden stuff, in season during the year.

JANUARY.

Artichokes, Jerusalem,	Mushrooms,
Asparagus,	Mustard,
Beets,	Orange,
Brocoli, white and purple,	Parsley,
Cabbages,	Parsneps,
Cardoons,	Potatoes,
Celery,	Radish,
Chervil,	Rape,
Cresses,	Sage,
Colewort,	Savory,
Cucumbers, hot-house,	Scorsonera,
Endive,	Skirrets,
Hyssop,	Sorrel, winter,
Lettuces,	Spinach,
Marjoram, pot,	Tarragon,
	Thyme,
	Turnips.

FEBRUARY.

Asparagus,	Lettuces,
Beans, Kidney,	Marjoram,
Brocoli, White and Purple,	Mint,
Burnet,	Mustard,
Beets,	Parsley,
Cabbages,	Radishes,
Cardoons,	Rape,
Celery,	Savoys,
Chard,	Savory,
Chervil,	Skirrets,
Cresses,	Sorrel,
Colewort,	Thyme,
Cucumbers,	Tansey,
Endive,	Tarragon,
	Turnips.

MARCH.

Artichokes, Jerusalem,	Lettuce,
Beets,	Marjorum, Pot,
Borecole,	Mushrooms,
Brocoli,	Mustard,
Burnet,	Onions,
Cabbages,	Parsley,
Cardoons,	Parsneps,
Carrots,	Radish,
Celery,	Rape,
Chives,	Savoury, Winter,
Colewort,	Savoys,
Cresses,	Shalots,
Cucumbers,	Spinach,
Endive,	Tansey,
Fennel,	Thyme,
Garlick,	Turnips,
Hyssop.	Tarragon.

APRIL.

Brocoli,	Onions, Young,
Burnet,	Parsley,
Celery,	Radishes,
Chervil,	Sorrel,
Colewort,	Spinach,
Endive,	Sprouts,
Fennel,	Thyme,
Lettuces,	Tarragon.

MAY.

Asparagus,	Cresses,
Artichokes,	Cucumbers,
Balm,	Fennel,
Cabbages,	Kidney Beans,
Carrots,	Lettuces,
Cauliflowers,	Mint,

Mustard,	Radishes,
Potatoes, Young,	Spinach,
Parsley,	Sorrel,
Pease,	Turnips,
Purslam,	Tragopagon.

JUNE.

Asparagus,	Parsley,
Artichokes,	Parsneps,
Beans,	Peas,
Cauliflowers,	Potatoes,
Cresses,	Purslane,
Cucumbers,	Radishes,
Kidney Beans,	Rape,
Lettuces,	Spinach,
Onions,	Turnips.

JULY.

Artichokes,	Mint,
Balm,	Mushroom,
Beans,	Onions,
Cabbages,	Potatoes,
Carrots,	Purslane,
Cauliflowers,	Peas,
Celery,	Scorsonera,
Chervil,	Sprouts,
Cresses,	Sorrel,
Endive,	Salsify,
Fenochia,	Radishes,
Garlic,	Turnips,
Kidney Beans,	Thyme.
Lettuces,	

AUGUST.

Artichokes,	Mushrooms,
Beans,	Onions,
Beets,	Peas,
Cabbages,	Parsley,
Carrots,	Radishes,
Cauliflowers,	Savory,
Celery,	Scorsonera,
Endive,	Shalots,
Fenochia,	Sprouts,
Garlic,	Salsify,
Kidney Beans,	Turnips,
Lettuces,	Thyme.
Marjoram,	

SEPTEMBER.

Artichokes,	Lettuces,
Beans,	Mushrooms,
Beets,	Onions,
Cabbages,	Peas,
Carrots,	Potatoes,
Cauliflowers,	Salsify,
Chervil,	Scorsconera,
Fenochia,	Shalots,
Garlic,	Sprouts,
Kidney Beans,	Sorrel,
Leeks,	Turnips.

OCTOBER.

Artichokes,	Beets,
Cabbages,	Parsneps,
Cardoons,	Potatoes,
Carrots,	Salsify,
Cauliflowers,	Savoury,
Celery,	Scorsonera,
Chard,	Shalots,
Chervil,	Skirrets,
Endives,	Sprouts,
Fenochia,	Rocambole,
Garlic,	Turnips,
Leeks,	Thyme.
Lettuces,	

NOVEMBER.

Beets,	Parsneps,
Cabbages,	Parsley,
Carrots,	Potatoes,
Cauliflowers,	Rocambole,
Cardoons,	Salsify,
Celery,	Savoys,
Chard,	Scorsonera,
Coleworts,	Shalots,
Endive,	Skirrets,
Leeks,	Spinach,
Lettuces,	Sprouts,
Onions,	Turnips.

DECEMBER.

Asparagus, forced,	Onions,
Beets,	Parsley,
Brocoli, white and purple,	Parsneps,
	Potatoes,
Cabbages,	Rocambole,
Cardoons,	Salsify,
Carrots,	Savoys,
Celery,	Scorsonera,
Cresses,	Shalots,
Endive,	Spinach,
Garlic,	Skirrets,
Leeks,	Turnips,
Lettuces,	Thyme.

VEGETABLES, TO PREPARE FOR KITCHEN USE.—On the vegetables you intend for immediate use, the greatest care and attention ought to be bestowed. After you have seen that your greens are nicely picked, lay them in a clean pan, out of the way of sand or dust, which are apt to hang round wooded vessels. Boil all your greens in well-tinned copper saucepans by themselves, and be sure to let them have plenty of water. Boil no kind of meat with them, as it will discolour them, and use no iron pans, these being very improper for the purpose; but let them be either copper, brass, or silver. Many cooks spoil their garden stuff by boiling them too much. All kinds of vegetables should have a little crispness, for if they be boiled too much, you will deprive them of both their sweetness and appearance.

It is very important to those who are not in the constant habit of attending markets, to know when the various seasons commence for purchasing sweet herbs. All vegetables are in their highest state of perfection, and fullest of juice and flavour, before they begin to flower. The first and last crop have neither the fine flavour nor the perfume of those which are gathered in the height of the season, that is, when the greater part of the crop of each is ripe. All vegetables of this kind ought to be gathered on a dry day; in order that they may preserve their colour when dried, cleanse them well from dirt and dust, cut the roots off, separate the bunches into small ones, and dry up by an artificial heat, that is, by means of a stove, or in a Dutch oven, before a common fire, that the dessication may be speedily finished. In applying the heat, the most requisite and only caution is to avoid burning them, and of this a sufficient test is afforded by the preservation of the colour. After they are thus dried, it is usual to lay them by in paper bags, in a dry place, though the best way to preserve the flavour of aromatic herbs is to pick off the leaves as soon as they are dried, to pound them, and to pass them through a hair sieve, and keep for use in well stopped bottles.

Vegetables by maceration are reduced into amylum, or starch, gluten, or vegeto-animal matter, mucilage, or mucus, besides the parenchyma, or refuse which remains behind.

Some have supposed that the proportion of nutriment of farinaceous matter was according to the quantity of vegeto-animal matter, and is insoluble in cold water, but forms a kind of mucilage in boiling water. No vegetable matter forms so much gluten as *wheat*, *vermicelli* and *macaroni* (which see), which is starch beat up with yolks of eggs and dried. Barley is by some considered a better aliment than wheat, because it consolidates a greater proportion of water by long boiling; they having established, as a general rule, that the more water a substance can consolidate, the more nutritious it is.

Boiled vegetables are more nutritious than raw; they are also better eaten when warm. Potatoe is the most valuable matter we have; after wheat, oats, and barley, parsneps and carrots are more nourishing than even potatoes. Barley made to grow, and then the growth stopped and dried, affords a great deal of sugar. Such substances as can be made sweet, are more nourishing than before.

VEGETABLES, To Preserve.—Carrots, parsneps, and beet-root, are to be kept in layers of dry sand; they should not be divested of the earth which attaches to them, on taking them out of the ground. The same observation applies to potatoes. Onions keep best hung up in a dry cold room. Parsley should be cut close to the stalks and dried in a warm room, or on tins in a very cool oven; it preserves its flavour and colour, and is very useful in winter. Cut cauliflowers when quite dry, with the leaves on, and hang them up by the stalk, they will keep long in a cellar; they ought to lie in water two or three hours, and afterwards to be boiled with a great deal of salt. Artichokes, slowly dried, ought to be kept in paper bags. Truffles, morels, lemon peel, &c., in a dry place ticketed. Small cabbages laid on a cold stone floor, before the frost sets in, will blanch and be very fine for many weeks, although the outer leaves may be quite spoiled.

As substitutes for garden vegetables, hop-tops growing on hedges are good in the spring, boiled in little bunches, and served up as asparagus. Turnip-tops are very wholesome, they have a most pleasant bitter taste, and are an excellent and acceptable substitute for greens in a frosty spring,—and are by many preferred, with roast veal. The tops of young green nettles may be used as above, and they are considered to be particularly salutary in the spring, during which season they are eagerly embraced by many, both for medicinal and dietetical purposes.

In consequence of a great proportion of vegetables being used in a recent state, the sooner they are gathered the better. Vegetables in general, should be kept apart, for if laid in contact, in a very short time they give off their peculiar flavours to each other. Leeks or celery will quickly spoil a whole basket of cauliflowers, or the finer vegetables. Another rule is, that they should not be kept in water till they are about to be used, as the flower thereby is greatly injured; but if, by having been cut or gathered sometime, they have become flaccid, it is then absolutely necessary to restore their crispness before cooking them, otherwise they will be tough and unpleasant. This is to be done when the size of the vegetable admits of it, as cauliflower, salad, celery, &c. by cutting off a piece of the stock, and setting the fresh surface, thus exposed, in water, which will be absorbed. In other cases the whole vegetable must be immersed in the water. As most vegetables are more or less succulent, their full proportion of fluids is necessary for their retaining that state of crispness or plumpness, which they have when growing in the natural state. When they are cut or gathered, the exhalation from their surface, while from the open vessels of the cut surface there is frequently considerable exudation or evaporation, by which means their natural moisture is diminished—the tender leaves become flaccid, and the thicker masses or roots lose their plumpness. These circumstances are not only less pleasant to the eye, but are a real injury to the nutritious parts of the vegetables: for in this flaccid and shrivelled state, their fibres are less easily divided in chewing, and the water which exists in their substances, in the form of their respective natural juices, is directly nutritious. The first care, therefore, in the preservation of succulent vegetables, is to prevent them from losing their natural moisture.

As regards the tender succulent vegetables, owing to a constant exhalation taking place from the surface, it is not altogether possible to prevent them from losing their nutritious moisture while its supply is cut off. The principle then of preserving them is to retard and diminish the exhalations: and this is most effectually done by protecting them from the rays of the sun, from air and heat. Even growing vegetables become flaccid in a hot sun, in consequence of the exhalation at that time being greater than the supply: and exposure to the sun is absolutely ruinous to all the more delicate vegetables. The operation of heated air being slower on the one than on the other, but similar in its effects.

With the view, therefore, of preserving succulent vegetables, they should be kept in a cool, shady and damp place. They should also be kept in a heap, and not spread out, which greatly influences their shrivelling. But when accumulated in too large heaps, for any length of time, they are injured in another way, by their heating as it is termed, which is the commencement in them of a chemical change, or fermentation, which altogether alters their nature. In many cases the chief object is to prevent evaporation.

Vegetables intended to be stored up, such as potatoes, turnips, carrots, and similar roots, should never be divested of the earth adhering to them when taken out of the ground, because the little fibres by which it is retained are thereby wounded, and the evaporating surface is increased. They should also be wounded as little as possible, and the tops off turnips or carrots should be cut off close to, but above the root.

The next thing to be attended to, is to protect them from the action of the air and frost. This is effected by laying them in heaps, burying them in sand or in earth, immersing them in water or covering them with straw or mats.

The action of frost is most destructive, as if it be considerable, the life of the vegetable is destroyed and it speedily rots. A less degree of frost effects a singular, but hurtful change upon the potatoes, by converting part of its starch or mucilage into sugar.

The germination of seeds also converts their starch into sugar, as is exemplified in the malting of barley. But even after this change has been induced, if the substance be thoroughly dried in a kiln, or otherwise, it will remain a long time without decay.—See *Fruits*.

VEGETABLE PRODUCTIONS, DIVISIONS OF.—The following vegetable productions used as food in the order in which the esculents appear in Bryant's Flora Dietetica, viz.:—

1. Apples,	7. Legumes,
2. Berries,	8. Nuts,
3. Flowers,	9. Roots,
4. Fungi,	10. Shoots,
5. Grain,	11. Stalks,
6. Leaves,	12. Stone Fruits.

(*See the above in their respective alphabetical order*).

The vegetable food of the inhabitants of different countries varies with the productions of each: in hot climates, nature, lavish of her stores, pours forth spontaneously a profusion of vegetables, suited to the indolence of the natives, in the temperature and colder climates what nature has abridged. Thus, in our own country, to which nature, with a sparing hand, has administered the necessaries of life, we are enabled to indulge in the luxuries of the Indies. The pine apple, the grape, the melon, and a variety of other delicious fruits, are here brought to a degree of perfection rarely seen even in countries which gave them birth.

Certain nations are in the practice of living on a greater variety of vegetables than others. The French, whose cookery is so highly esteemed by some, use a number of herbs scarcely known to us. The Dutch also are celebrated for the productions of their kitchen gardens. The English, as a nation, are certainly more in the practice of eating vegetables than formerly, hence perhaps the sea scurvy has in a great degree been banished from among us, and the community benefited in various ways.

The various articles of nourishment we derive from the vegetable kingdom, may with propriety be divided into five orders.

I. The different species of farina, or grain, such as wheat, rye, barley, and oats.

II. The legumes, or pulse, such as peas, beans, &c.

III. The various kinds of salads and pot-herbs.

IV. All the different roots; and

V. Fruit, or the productions of trees and shrubs.

The first of these, namely, the farinaceous, are very nourishing on account of the copious mucilage they contain, but they are likewise difficult to digest.—See *Bread*.

The second order of vegetable aliment includes all the leguminous productions, as beans, peas, lentils, and the like; these contain a solid gluten or mucilage, and afford a rich and strong nutriment, which best agrees with a vigorous stomach. They also have a considerable proportion of crude particles, which cannot be assimilated to our fluids, and must, therefore, remain undigested in the bowels, to the great detriment of the alimentary canal. The *meal*, or farina, of the leguminous class is digested with more difficulty than that of grain; besides, it contains much fixed air; on which account it is extremely flatulent, is apt to occasion costiveness, and to communicate various kinds of acrimony to the blood. These effects, however, it produces only when it is eaten too frequently and copiously. Hence bread made of peas or beans, either alone or mixed, and ground together with wheat, is improper for daily use.

We must not, however, imagine that even the most wholesome articles of food, are altogether free from air. This aliment is a necessary and useful ingredient to promote the digestion of other alimentary substances. The proportion of fixed air varies extremely in different vegetables; all the leguminous plants particularly abound with it; and even persons with whom they agree well, must have experienced flatulency and torpor, after a copious use of peas or beans. Those who are fond of pea soup would better consult their health by boiling the peas whole, than split and deprived of their husks; for these promote the grinding of the peas, and prevent them from turning acid in the stomach, which split peas readily do; they are also apt to occasion oppression in the bowels, and a very troublesome heart-burn.

The third order of vegetables comprises the various kinds of salads and herbs used in cooking; such as greens, cabbage, spinach, and the like. These contain a great proportion of water, and little nourishment; they serve to fill the stomach, resist putrefaction, and may, therefore, be eaten more freely in summer than in winter; being besides of a softening, laxative, saponaceous, and consequently solvent nature. They are well calculated to relieve the bowels, on account of their watery consistence; they are of peculiar service to lean people, to those who lose much moisture by perspiration, or who are troubled with flushings and undulations of the blood; (in which case animal food is improper)—and as these vegetables contribute to promote insensible perspiration, they are cooling, and assist all the emunctions of the body. Their nourishment is in proportion to the mucilage they contain; but as this is in a very diluted state, the aliment they afford is inconsiderable. They are further distinguished by thin, earthy, acrid, and aerial particles, both with respect to their nutriment, and their effect upon the first passages. They become soft by boiling, many of the aerial particles are expelled, and are thus rendered more digestible; but the practice of boiling them in large quantities of water, which is afterwards poured off, is extremely absurd and injudicious, for, with the water, their best and most nutritious parts are consequently thrown away, hence these vegetables ought to be thoroughly washed, and cabbage excepted, stewed in a small quantity of water, which will be so far reduced by slow boiling, that it may be brought to the table with the substance dressed. To improve their relish as well as to render these vegetables less flatulent, spices are generally added with a view to assist digestion; and for the same reason they are eaten in a raw state, with vinegar, salt, pepper, and the like.

Berries. — Indigenous, or native berries.

Bearberry,
Blackworts or bilberry,
Chili strawberry,
Chinese strawberry,
Cloved berry,
Common barberry,
————bramble,
————English juniper,

Common strawberry,
Devonshire strawberry,
Dewberry,
Dogs'-rose,
Gooseberries,
Hautboy strawberry,
Maple-leafed service, or sorb,
Minion-wood strawberry,
Mountain strawberry,
Northumberland strawberry,
Raspberry,
Red-blossomed strawberry,
Red and white currants,
Red worts, or cranberry,
Royal hautboy,
—— wood strawberry,
Smooth-stalked raspberry,
Shrubby strawberry,
Swedish-green strawberry,
——— juniper,
Virginia scarlet-blossomed strawberry,
——— scarlet strawberry,
Wild Virginian strawberry,
White bean tree,
White raspberry,
Wood strawberry.

Foreign Berries, often raised in gardens and stoves.

Annual guinea pepper,
Apple guava,
Apple-shaped granadilla,
Banana, or small fruited plaintain,
Bay-leafed passive flower,
Bengal quince,
Black-fruited mulberry,
Common citron,
——— fig,
——— grape,
——— lemon,
——— orange,
Corinthian currants,
Custard apple,
Dwarf fig,
Hermaphrodite-fruited fig,
India date plum,
Lime-tree,
Love-apple,
Mad-apple,
Mammee,
Medlar,
Mexican medlar,
Pawpaw, or popo,
Palestine nightshade,
Pear guava, or bay plum,
—— shaped pawpaw,
Penguin,
Perennial guinea pepper,
Pine apple,
Pishamim plum,
Plantain tree,
Pomegranate-leafed malfrighia,
Prickly pear,
Purple-fruited fig,
Sapadillo,
Shadock orange,
Smooth-leafed Barbadoes cherry,
Sour sop
Star apple,
Sweet sop,
Sycamore, or Pharoah's fig,
Red-fruited raspberry,
True service apple,
White-fruited mulberry.

Leaves.—(See also *Salads*). The following leaves are eaten as pot-herbs:—

Cabbages,
Celery,
Common chervil,
——— hyssop,
——— marjoram,
——— ox tongue,
——— sowthistle,
——— thyme,
Fine-leaved sweet marjoram,
Garden rosemary,
Green and red sage,
Leeks,
Mustard thyme,
Parsley,
Pot marjoram,
Rock samphire,
Summer savoury,
Sweet-scented basil,
Tea sage,
White beet,
Winter savoury,
Winter sweet marjoram,
Wood sorrel.

Flowers.—The following flowers are edible.

Annual sunflower,
Caperbush,
Cardoon,
Common Judas tree,

Common marigold,
Cotton thistle,
Dwarf carline thistle,
Globe artichoke,
Green and French artichoke,
Indian cress,
Marsh marigold,
Small Indian cress,
Safflower.

The fourth order of vegetables consists of all the esculent roots, or such as are used at our tables; they are either of the mild, or of the astringent and acrid kind. The former are much more nourishing and less flatulent than the latter; which, however, possesses some medicinal properties, such as the various species of radishes, onions, garlic, and the like. Roots are neither so nourishing nor so easily digested as animal food. Yet we may consider it as a certain rule that any kind of aliment, for which we feel a natural and permanent appetite, is conformable to our nature. Of this kind is that beneficial root the potatoe, which in the most simple preparation, and without any addition, affords an agreeable and wholesome food to almost every person, and particularly to children. It is one of the highest alimentary substances, occasioning neither viscidity nor flatulence, and can be hurtful only when immoderately taken. But being a dry vegetable and containing many earthy particles, it requires a proper quantity of drink to prevent obstructions. Its excellent nourishment is sufficiently obvious in the healthiness of those country people, whose principal food is potatoes, as well as in animals that are fattened upon these roots.—See *Potatoes—Roots.*

The fifth and last order of vegetable substances comprehends the fruit, or productions of the different trees and shrubs.—See *Fruit.*

VENISON.—The flesh of deer, game, or beasts of chase. The flesh of the deer kind, as the buck, the doe, the hart, the hind*, and also that of hares, contains much good nutriment; but to the injury of health, these animals are generally eaten when half putrified, though they are naturally much disposed to putrescency. When properly dressed, they afford a mellow food, and are readily assimilated to our fluids. But as wild animals, from their constant motion and exercise, acquire a drier sort of flesh than that of the tame, it should never be boiled, but always ought to be roasted or stewed. From the same cause, the fluids of wild animals are more heating, and more apt to putrify, than those of the domestic kind. Persons, therefore, who are pre-disposed to scurvy or other putrid diseases, should not eat much game, especially in summer. This pernicious tendency of game may be corrected by the addition of vinegar, acid of lemons, or wine; salad also is very proper to be eaten with it. Those parts of wild animals which have the least motion, are the most juicy and palatable: the back for instance, is the best part of a hare. Venison that is well fed, and killed at a proper season, is considered not only the most wholesome of that kind of flesh, but also the most delicious. It is more tender than mutton, and much easier of digestion. The fat is a great delicacy, and very much esteemed by the veritable epicure.—See *Food, Animal, Varieties of.*

VERDIGRIS, (*Ærugo æris*).—An impure subacetate of copper. It is prepared by stratifying copper-plates with the husks of grapes, after the expression of their juice, and when they have been kept for some time imperfectly exposed to

* The term venison is also applied to the flesh of beasts of game—that is, animals that are caught by way of hunting. Huntsmen have agreed that every beast of the forest that is food for man, as bears, hares, &c., is venison.

the air, in an apartment warm but not too dry, so as to pass to a state of fermentation, when a quantity of vinegar is formed. The copper-plates are placed in jars in strata, with the husks thus prepared, which are covered. At the end of twelve, fifteen, or twenty days, these are opened: the plates have an efflorescence on their surfaces of a green colour and silky lustre: they are repeatedly moistened with water; till at length a crust of verdigris is formed, which is scraped off with a knife, put into bags, and dried by exposure of them to the air and sun. It is of a green colour, with a slight tint of blue. It is used in medicine as well as the arts. For the deleterious properties of verdigris, which results among the foremost of the culinary poisons, and for cases and symptoms, antidotes, and proofs of its existence, &c., see *Copper*.

VINEGAR.—Good vinegar has ever been accounted salubrious when discretionally used, especially in bilious constitutions; and in epidemic diseases, it is an experienced preservative. The learned Boerhaave extols its efficacy in putrid fevers, small-pox, and the bites of venomous insects. It is an excellent preserver of animal substances from putrefaction, especially in warm temperatures. It promotes digestion, and is, perhaps, never communicated to the blood in its acid state, hence it is an erroneous notion that vinegar is detrimental to the secretion and quality of the milk in wet nurses. In some individuals, however, it is apt to produce a sudorific effect, and even laxity of the bowels, on account of its astringent property; but used with moderation as an article of seasoning rather than drink, especially with animal food in warm weather, it is both savoury and wholesome. But nothing short of good vinegar ought to be obtained; since various kinds of it, which are made of sloes, the husks of nuts, and other strong astringents, certainly are pernicious. The best vinegar, for common use, made about London, is excessively bad, when compared with that which is made from good white wines, raisins and sugar. That made from sour wine or ale, cider or beer, is, notwithstanding its austere taste, not to be accounted perfect vinegar. When any of these does not turn out sufficiently acrid, oil of vitriol is frequently made the compensative substitute.

Individuals subject to habitual costiveness, or those who labour under spasmodic complaints of the bowels, colic, and other concomitant symptoms of flatulency, ought to abstain from the use of vinegar and all vegetable acids. When vinegar is employed to fumigate the chambers of the sick, it should be boiled in glazed earthen pipkins and passed about the bed.

Acetic acid, or distilled vinegar, possesses the same virtues as common vinegar, though in a stronger degree; and is principally used for pharmaceutical purposes. The strong acetic acid of the Edinburgh pharmacopœia, is employed as an analeptic remedy, and is snuffed up the nostrils in faintings, asphyxy, hysterics, headachs, &c.

VINEGAR, Pickles in.—Many of these are kept in the shops: the vegetables soaked in salt and water for some hours, then drained, and boiling vinegar poured upon them; in a few days the vinegar is poured off, boiled a little, and then poured on again; if the vinegar is good, and the substances are not too moist, it is sufficient to pour it cold upon them, and keep the vessel closely covered. The white vinegar, or pyroligneous acid, much diluted, may be used still more advantageously.

The ancients had several kinds of vinegar, which they used to drink. The Roman soldiers were accustomed to take it in their marches. The Bible represents Boaz, a rich citizen of

Bethlehem, as providing vinegar for his reapers, into which they might dip their bread, and kindly inviting the amiable Ruth to share with them in their repast; hence it may be inferred that the harvesters, at that period, partook of this liquid for their refreshment, a custom still prevalent in Italy and Spain. There was, however, a kind of potent vinegar, which was not proper for drinking, at least, till well diluted.—(See *Psalm* lxix, 21, and compare *Prov.* x, 26). We must distinguish then between that vinegar and small wine, which was used as a drink, and that which was of considerable strength, and employed in sauces. Some suppose that oil was usually mingled with the vinegar, which was taken as a beverage. The Algerines even indulge their miserable captives with a small portion of oil to the vinegar which they allow them with their bread. Mr. Joseph Pitts, who was taken prisoner by the Algerines and sold for a slave, in the account of the treatment which he and his companions received from these now subjugated pirates, of which he complains with some asperity, says that his allowance was five or six spoonfuls of vinegar, half a spoonful of olive oil, a small quantity of black biscuit, a pint of water, and a few olives a day.

VINEGAR, AROMATIC. — Commonly used as an odorament, and is an elegant improvement of the *vinaigre de quatre voleurs.*

VORACITY—(See *Gluttony).*

W.

WATER.—Water is a transparent colourless fluid, without taste or smell, in a very slight degree compressible. When pure, it is not liable to spontaneous change; it is liquid at the common temperature of our atmosphere, assuming the solid form, at 32° of Fahrenheit, and gaseous at 212°; but returning unaltered to its liquid state, on resuming any degree of heat between these points. It is capable of dissolving a greater number of natural bodies than any other fluid whatever, more particularly those known by the name of saline. It also performs the most important functions in the vegetable and animal kingdoms, and enters largely into their composition, as a constituent part. The simple waters are the following:

1. Distilled Water.
2. Rain Water.
3. Ice and Snow Water.
4. Spring Water.
5. River Water.
6. Stagnated Water.

1. *Water, distilled.*—This is the lightest form of all others, holding neither solid nor gaseous substances in solution; is perfectly void of taste and smell—colourless, and beautifully transparent—has a soft feel, and wets the fingers more readily than any other. It mixes uniformly with soap, into a smooth opaline mixture; but it may be added to a solution of soap, in spirit of wine, without injuring its transparency. The clearness of distilled water is not impaired by the most delicate chemical re-agents, such as lime water, a solution of barytes in any acid, nitrated silver, or acid of sugar. When evaporated in a silver vessel, it leaves no residuum; if preserved from access with foreign matter floating in the air, it may be kept for ages unaltered, in vessels upon which it has no action, as it does not possess within itself the power of decomposition. As it freezes exactly at 32° of Fahrenheit, and boils at 212°, under the atmospherical pressure of 29. 8 inches, these points are made use of as the standard ones for thermometrical division, and its specific

weight being always the same, under the mean pressure of temperature, it is employed for the comparative standard of specific gravity, &c.

Distilled water is seldom employed to any extent in the preparation of food, or in manufactures, on account of the trouble of procuring it in large quantities; but for preparing a great number of medicines, and in almost every one of the nicer chemical processes that are carried on in the liquid way, this water is an essential requisite.

2. *Rain Water.* — The next in purity to distilled water is that which has undergone a natural distillation from the earth, and is condensed in the form of rain. This is a water so nearly approaching to absolute purity as probably to be equal to distilled water, for every purpose, except in the nicer chemical experiments. The foreign contents of rain water appear to vary, according to the state of the air through which it falls. The heterogeneous atmosphere of a smoky town will give some impregnation to rain, as it passes through, and this, though it may not at once be perceptible, on chemical examination, will nevertheless render it liable to spontaneous change, and hence rain water, if long kept, especially in hot climates, acquires a strong smell, becomes full of animalculæ, and is in some degree putrid. The specific gravity of rain water is so nearly the same as that of distilled water, that it requires the most delicate instruments to detect the difference. Rain that falls in towns acquires a small quantity of the sulphate of lime and calcareous matter, from the mortar and plaster of the houses.

3. *Ice and Snow Water* are equal to rain water in purity, and when fresh melted, contain no air, which is expelled during freezing. In cold climates, and in high latitudes, thawed snow forms the constant drink of the inhabitants during winter, and the vast masses of ice which float on the Polar seas, afford an abundant supply to the mariner. It is well known, that in a weak brine, exposed to a moderate freezing cold, it is only the watery part that congeals, leaving the unfrozen liquor proportionably stronger of the salt. The same happens with a dilute solution of vegetable acids, with fermented liquors and the like, and advantage is taken of this property to reduce the saline part to a more concentrated form. Snow water has always lain under the imputation of occasioning those strumous swellings in the neck, which deform many of the inhabitants of the Alpine valleys, which with us are called Derbyshire necks, although this opinion appears in some measure to be controverted, in consequence of the disease being known to occur in places where ice and snow are never seen, as well as from the fact of its being quite unknown in Chili and in Thibet, though the rivers of those countries are chiefly supplied by the melting of the snow, with which the mountains are covered.

4. *Spring Water.* — Under this comprehensive class are included all waters that spring from some depth beneath the soil, and are used at the fountain head, or, at least, before they have run any considerable distance exposed to the air. It is obvious that spring water will be as various in its contents, as the substances that compose the soil through which it flows. When the ingredients are not such as to give any peculiar medical or sensible properties, and the water is used for common purposes, it is distinguished as a hard or soft spring, sweet or brackish, clear or turbid, &c. Ordinary springs insensibly pass into mineral springs, as their foreign contents become more notable or uncommon; though sometimes waters have acquired great medical reputation from mere purity. By far the greater number of springs are cold;

but as they take their origin at some depth from the surface, and below the influence of the external atmosphere, their temperature is in general tolerably uniform, during every vicissitude of season, and always several degrees higher than the freezing point. Others again arise constantly hot, or with a temperature always exceeding the summer heat, and the warmth possessed by the water is entirely independent of that of the atmosphere, and varies little, winter or summer.

One of the principal inconveniences in almost every spring water is its hardness, owing to the presence of earthy salts, which, in by far the greater number of cases, are only the insipid substances, chalk, and selenite, which do not impair the taste of the water, whilst the air which it contains, and its grateful coolness, render it a most agreeable, and, generally, a perfectly innocent drink; though sometimes, in weak stomachs, it is apt to occasion an uneasy sense of weight in that organ, followed by a degree of dyspepsy. The quantity of earthy salts varies considerably; but, in general, it appears that the proportion of five grains of these in the pint will constitute a hard water, unfit for washing with soap, and for many other purposes of household use or manufactures. The water of deep wells is always, *cæteris paribus*, much harder than that of springs which overflow their channel; for much agitation and exposure to air produce a gradual deposition of the calcareous earth, and hence spring water often encrusts, to a considerable thickness, the inside of any kind of tube through which it flows, as it arises from the earth. The specific gravity of these waters is also, for the most part, greater than that of any other kind of water, that of the sea excepted. Springs that overflow their channel, and form to themselves a limited well, pass insensibly into the state of stream or river water, and thereby become altered in some of their chemical qualities.

5. *Water, River.*—This, in general, is much softer and more free from earthy salts than the last, but contains less air of any kind, for by the agitation of a long current, and in most cases by a great increase of temperature, it loses common air and carbonic acid, and with this last most of the lime which is held in solution. The specific gravity thereby becomes less, the taste not so harsh, but less fresh and agreeable, and out of a hard spring is often made a stream of sufficient purity for most of the purposes where a soft water is required. Some streams, however, that arise from a clean silicious rock, and flow in a sandy or stony bed, are from the outset remarkably pure. Such are the mountain lakes and rivulets in the rocky districts of Wales, the source of the beautiful waters of the Dee; and numberless other rivers that flow through the hollows of every valley.

Switzerland has long been celebrated for the purity and excellence of its waters, which pour in copious streams from the mountains, and give rise to some of the first rivers in Europe. Some of them never freeze in the severest winter, the cause of which is probably, as Haller conjectures, that they spring at once out of a subterraneous reservoir so deep as to be out of the reach of the frost, and during their short course, when exposed to day, they have not time to be cooled down from fifty degrees, their original temperature, to below the freezing point. Some river waters, however, that do not take their rise from a rocky soil, and are indeed at first considerably charged with foreign matter, during a long course, even over a rich cultivated plain, become remarkably pure as to saline contents, but often fouled with mud, and vegetable or animal exuviæ, which are rather suspended than held in true solution. Such for instance, is that of the Thames, which taken up at London at low water, is a very soft and good water, and after rest and filtration, it holds but a very small portion of any thing that could prove noxious, or impede any manufacture. It is also excellently adapted for sea voyages; but it here undergoes a remarkable and spontaneous change. No water carried to sea becomes sooner putrid than that of the Thames. When a cask is opened, after being kept a month or two a quantity of inflammable air escapes, and the water is so black and offensive as scarcely to be borne. Upon racking it off, however, into large earthen vessels, (oil jars are commonly used for the purpose), and exposing it to the air, it generally deposits a quantity of black slimy mud, becomes clear as crystal, and remarkably sweet and palatable.—(See *Observations on the Purifications of corrupted Waters*). The Seine has as high a reputation in France, and appears from accurate experiments, to be a river of great purity. It might be expected that a river which has passed by a large town and received all its impurites, and been used by numerous dyers, tanners, hatters and the like, who crowd to its banks for the convenience of plenty of water, should thereby acquire such a fullness as to be very perceptible to chemical examination for a considerable distance below the town; but it appears from the most accurate examination, that where the stream is at all considerable, these kinds of impurities have but little influence in permanently altering the quality of the water, especially as they are for the most part only suspended, and not truly dissolved, and therefore mere rest, and especially filtration, will restore the water to its original purity. Probably, therefore, the most accurate chemist would find some difficulty to distinguish water taken up at London, from that procured at Hampton-court, after each has been purified by simple filtration, &c.

Stagnated Waters.—The waters that present the greatest impurities to the senses, are those of stagnated pools, and low marshy countries. They are filled with the remains of animal and vegetable matter undergoing decomposition, and during that process, becoming in part soluble in water, thereby affording a rich nutriment to the succession of living plants and insects, which are supplying the place of those that perish. From the want of sufficient agitation in these waters, vegetation goes on undisturbed, and the surface beomes covered with converva,* and other aquatic plants; and as these standing waters are in general shallow, they receive the full influence of the sun, which further promotes all changes that are going on within them. The taste is generally vapid, and destitute of that freshness and agreeable coolness which distinguish spring water. It should however be remarked, that stagnant waters are generally soft, and many of the impurities are only suspended, consequently separable by filtration; and perhaps the unpalatableness of the drink has caused it to be in worse credit than it deserves, on the score of salubrity. The decidedly noxious effects produced by the air of marshes and stagnant pools, have often been supposed to extend to the internal use of these waters; and often, especially in hot climates, a residence near these places has been as much condemned on one account as on the other, and in like manner, an improvement in health has been as much attributed to a change of water as of air.

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* The name of a genus of plants in the Linnean system: a kind of moss, named from its use formerly in healing broken bones.

WATER, MEDICINAL PROPERTIES OF.—If there is in nature a medicine that deserves the name of universal, it is in our opinion common water. The use of it is so general and so necessary to us all, that we can neither live nor preserve our bodies sound and healthy, without it, for it guards against every disease, protects and defends the body from all kinds of corruption that may prove fatal to life, and answers all possible intentions of cures, so that without it no disorder, whether chronic or acute, can be happily and successfully removed. In confirmation of this opinion, we shall not insist on the medicinal springs, whether hot or cold, nor attempt to prove their salutary virtues in subduing various disorders, but confine ourselves entirely to common water, the universal use of which we at present design to recommend.

But since there is a great difference between different writers, we are carefully to inquire which are best calculated for answering this medicinal intention. The true way of examining whether the waters are pure, is by chemical experiments, two of which we have singled out for our own use, and recommended to others, as exactly discovering the purity or impurity of waters. The first is by dropping into them oil of tartar, and the second a solution of silver in aquafortis. If the waters are pure, such as rain water, water distilled and some sorts of spring water, no alteration will follow on dropping these liquors into them; but if gross and impure, they turn milky with oil of tartar (*solution of potash*), especially if they abound with a chalky earth, and the solution of silver turns impure water thick, grey coloured; and if they participate of iron almost red.

The effects of waters also manifest their nature, subtility, and purity; thus, those that are light and soft seem best for mollifying the bones of animals, and the boiling of sea-fish. Bleachers find a remarkable difference in waters, the softer and fatter sorts serving better to wash and bleach, than such as are ponderous, hard, and take soap with difficulty. Bakers find, that the more soft and subtile waters make their bread rise well. Gardeners observe, that such waters as are light, subtile, and spirituous, are much better for their plants than hard. Masons, and makers of figures in plaister of Paris, find hard water the best, and can scarce work with soft, so as to give their work a proper degree of strength and firmness. Chemists find that rain water is best suited to wash their magisteries and metalline powders, as readily dissolving the salts, which hard spring waters will scarcely affect. We daily observe in the domestic operations of brewing, washing, making tea, &c., that the more subtile and soft sorts are better than spring water. But for medicinal purposes we prefer rain water, being naturally distilled by the sun, and thus rendered subtile, and fitter for solutions, infusions, extracts, and all internal uses. However, this water being mixed with various mineral, vegetable and animal exhalations, is thence rendered easily corruptible, if exposed to the open air, or suffered to stand long in wooden vessels. The rain that falls in the month of March, will keep longer, as not then receiving so many effluvia: the better to fit this water for medicinal use, it should be kept in earthen vessels stopped close, and thus if it be collected, not in cities and towns, from the spouts of houses, but in the open fields, it may be kept sound and fit for service several years. Next to rain water in point of goodness is that of rivers, but as rivers proceed from springs, situated in high and mountainous places, and as rains increase these springs, which, running over vast tracts of land, absorb many different matters from the earth, hence rivers become more turbid and impure, the larger the tracts of land are, they waste in their course; add to this, that they attract numerous heterogeneous parts from the bottom they flow over, whence there often arises a considerable difference between rain and river water. Lastly, rivers being perpetually exposed to the open air and the action of the sun, have their most subtile parts exhaled and sublimed into the atmosphere so as to supply the matter of clouds and rain.

There is also a great difference between the waters of rivers; for those that have a swift course or run violently down from the mountains where they rise into the lower plains, are very different from those where the course is slow and gentle, and which rise in lower places: thus rapid rivers usually afford a light and subtile water not very subject to corruption, though somewhat improper for the feeding and nourishing of fish, because the rapidity of the motion prevents the spawn of the fish from adhering to the banks, so as to be there animated by the heat of the sun; but if these rapid rivers do not greatly abound with fish, the few they produce are excellent and well tasted. The rivers that flow gently differ from the former, not only on account of the immense quantities of fish they breed, but also because they generally run on fat clayey bottoms, or such as afford proper retreats and nutriments to fish, whence such rivers are not so clear and crystalline as those of a rapid course, but then such waters are of a softer nature and serve for the purposes of washing, fulling, scouring, &c., without any considerable addition of soap. River waters are not, therefore, all alike, or equally proper for medicinal purposes; those that should be made choice of on that account are clear and light, do not easily corrupt, and exhibit no alteration on the addition of oil of tartar or any metallic solution; and it must be constantly observed that rivers of a rapid course are universally more wholesome than those which flow with a slow and gentle current.

Spring waters are also observed to differ in their virtues; for according to the different nature of the soil or the earthy matters they meet with or imbibe, they receive a different nature and disposition, whence we seldom find springs of a perfectly pure and light water. The greatest part of them leave on distillation a copious earthy substance; there are but few that do not turn thick with metalline solutions or alkaline salts; some of them contain common salt, and others a subtile volatile vitriol, If they contain common salt, oil of tartar will discover it, by its turning milky; if they contain a vitriolic principle, the infusion of galls will turn it black. Others again contain particles of iron, and thence acquire a styptic taste, and on standing some time in a bottle deposit an ocher. It is, therefore, the business of art and industry, out of so large a number of springs wherewith nature supplies us, to discover the most wholesome, which are known by their lightness, transparency, purity, long keeping, and the trials above mentioned: there is another difference observable in spring waters, some being hard and others soft; the latter will keep the longest, and will not so easily freeze as the former. Both of them are wholesome and medicinal, if properly adapted to the disease and constitution of the patient.

Having thus shewn which waters are most proper for medicinal uses, and how they are distinguished and examined, we shall proceed to prove the excellency and universal virtue of pure water. Pure and light waters are agreeable to the different natures and constitutions of all men for the circulation of the fluids, being that which preserves and secures the body from corruption, and keeps the blood and juices in a thin moveable state, water must be therefore necessarily appropriated to the producing of that effect. Every one will readily grant that a proper fluidity of the blood is highly necessary to procure a free and equable circulation, by means whereof the vessels are kept always open, obstructions prevented, excretions secured, stagnations and impurities of the juices prevented, and the causes of diseases cut off. And whether there be in nature a more proper remedy for procuring this fluidity to the blood, we leave to the judgment of sober and experienced physicians. To us it appears that pure and subtile water exquisitely divides the solid and viscid parts of the blood and juices, so as to prevent their coagulating or running together, at the same time that it dissolves the excrementitious matters of various kinds, whether earthy, saline, or oily, and discharges them by the proper outlets. And hence we conceive is the reason why the drinkers of water, provided it be pure and excellent, are more healthy and longer lived, than such as drink wine or malt liquors, and why it generally gives them a better appetite, and renders them plump and fleshy, for certainly water is a very proper menstruum for dissolving the aliment, extracting its chyle or nourishing part, and carrying it through all the innermost and finest canals of the body. Besides, it readily washes off and dissolves that tough and viscous slime which lines the glandular coats of the stomach and duodenum, or first division of the intestines; whereby the dissolving juices of the bowels, which are the immediate instruments of digestion, may more plentifully mix with the food and perform their office. Those who drink water are observed to have much sounder and whiter teeth than others, for putrefaction and corruption of the teeth are caused by the scurvy, a disease prevented by the drinking of pure water, which actually cleanses and washes the blood, and discharges its impurities. Add to this, that drinkers of water are brisker and more alert, in all the actions both of mind and body, than such as use malt liquors; most of which produce clammy, viscid and sluggish juices, hardly capable of passing through the exquisitely fine vessels of the brain and nerves, whence proceed indolence and weakness of the limbs both to sense and motion.

Having thus considered the singular efficacy of water, by way of prevention, we come next to examine what it will perform in the cure of diseases. Physicians divide all distempers into acute and chronical. Of the acute kind, the principal are fevers; and experience shews that if water be not the only thing, there is no better remedy yet found, than a free and copious use of it. Whence Hippocrates and others highly recommend an aqueous ptisan, or medicinal drink for this purpose. And accordingly by this alone, with the assistance of rest and temperate warmth, the most violent fevers have been frequently cured, without any other medicine. The caution required in the use of water for this distemper is not to give it too cold, especially near the crisis and when there is reason to fear an inflammation, nor when the body is stiff and rigid, and the external parts parched and bound up; but to wait for the time when there appears a disposition to sweat, for then it is always proper to give water in large quantities.

Those called chronical diseases, generally arise from an obstruction of the viscera and glandular parts, or an overcharge and foulness of the juices, with the stagnation thereof in the larger vessels. All which, according to the rules of reason and experience, are to be removed in order to complete the cure; but to produce this effect, there is not a more serviceable remedy than pure water. How eminently serviceable the medicinal waters both of hot and cold springs are for this purpose, is well known from experience; but the greater part of their efficacy in this respect is, beyond all dispute, owing to the quantity of pure elementary water they contain. The singular efficacy of pure hot water also appears from the nature and use of drinking tea, for it is certainly a mistake to attribute all the good effects of tea to the leaves of the plant. The principal virtue of this infusion is, doubtless, owing to the quantity of pure hot water employed in the making of it; while the herb by its astringency prevents the fibres of the body from being too much relaxed and weakened by it, therefore, as numerous diseases are attended with a strong contraction of the fibres, all physicians who are well versed in practice, will be cautious of allowing too freely this astringent plant in such cases. That tea is an astringent or styptic plant appears from several experiments, particularly from its turning inky with a solution of iron or the chalybeate waters, like oak bark, balustines, and other astringent vegetables; and to speak a serviceable truth, we have in our own country many plants whose virtues exceed those of the Indian tea; and choice should be made of those plants for medicinal use according to the difference of distempers. Thus, for example, in diseases of the breast, Paul's betony is proper; common betony in disorders of the nerves; balm and pennyroyal in disorders of the uterus; ground ivy in ulcers of the kidneys; buck bean in the scurvy, &c.; being respectively made into tea with the purest water and drank hot. Again, common chamomile may be advantageously used by way of tea against the cholic; parsley in the stone; crowfoot in the moist asthma, &c. Rosemary tea is by many recommended as excellent in many nervous diseases, viz.—the epilepsy, palsy, and apoplexy, and for defending the body and preventing the catching of cold, especially if made with the flowers of the plant. But in all teas it is a caution of the highest moment that the water designed for the infusion be not suffered to boil long, but as it simmers strongly, immediately be poured upon the plant in order to prevent the loss of its most subtile parts.

It is well known that a fulness of blood, and juices, brings on many distempers, but to prevent this fulness, the most proper thing is hot water, made into an infusion with herbs, which thus, by dissolving the glutinous humours, prevents the mass of blood from increasing too fast. A free use of water is equally serviceable in purifying bad juices, as it readily washes off their impure, saline, and drossy parts, through all the excretory passages of the body; besides this, the drinking of water promotes all the evacuations, keeps the belly soluble, preserves the urinary passages open, washes and cleanses the same from the adhesion of gravelly or stony matter, and powerfully promotes that most healthy discharge of insensible perspiration. Lastly, water is the effectual vehicle of all other remedies. Thus, antiscorbutics and vegetable medicines, appropriated to cleanse the blood, prove of little service in correcting the depravities of the humours, unless their virtues are carried by the assistance of water, in the form of decoctions and infusions, into the juices and remote parts of the body. To sum up all; in whatever cases there is a necessity, either of altering, evacuating, opening, or resolving, water is, at all times, the best of remedies.

WATER, PURIFICATION OF CORRUPTED.—As the health of man principally depends on the purity and solubility of the water he uses, we ought, where necessary, to deprive it of its pernicious qualities, and this can be done by boiling and filtering, but most effectually by distillation. The putrid substances in the water may be corrected by the addition of an acid. Thus half an ounce of alum in powder will make twelve gallons of corrupted water pure and transparent in two hours, without imparting any sensible degree of astringency. By the addition of a very small quantity of quick lime, water may be preserved from corruption in long voyages; or, to prevent water from putrescence at sea, add a small quantity of alkali and vitriolic acid to every cask, which will preserve it pure and wholesome for a twelvemonth. Charcoal powder has also been found to be excellently adapted to check the putrid tendency of water, and for this reason the staves of the casks used on shipboard ought to be well burnt in the inside, to keep the water from corruption. Vinegar, or other strong acids, are also well calculated to correct putrid water, and may be either mixed with it, or drank immediately after, to prevent its bad effects.

Water being one of those substances without which mankind cannot exist, is, it is generally known, apt to become putrid, and to contract, in consequence of this occurrence, qualities which render its use unsafe. This circumstance is the more particularly embarassing during sea voyages, and it deserves no less consideration in those districts where the inhabitants are often obliged to make use of stagnant water, or of such as, from its hepatic taste and smell, is very disagreeable. It would be useless here to enumerate the various disorders occasioned by the use of such waters; but it is, undoubtedly, an object of great importance, to make known the means by which the putrefaction of water may be prevented, and by which that water, in which putrefaction has already taken place, may be rendered perfectly sweet.

It has been found by repeated experiments on the purifying powers of charcoal, that amongst other properties, it possesses that of almost instantly depriving the most putrid water of its bad smell. From this circumstance it was suggested, that the same substance might have a very powerful effect in preventing water from becoming putrid, which it was afterwards actually found to do.

WATER, &c. TO PRESERVE PURE.—Pure water, properly so called, when deprived of all heterogeneous parts, is not subject to become putrid, but it is very difficult to keep it long in a pure state, on account of its dissolving powers. To preserve water for any length of time in that state, it would be necessary to keep it in a vessel of glass, or of earthenware; but the brittleness of these vessels renders it impossible to make use of very large ones, and we are obliged to have recourse to wooden vessels, which, though they are not subject to be broken, like the others, have the great disadvantage of imparting to the water a large quantity of mucilaginous and extractive particles, which hasten its putrefaction. It is well known that these particles, in a state of division, furnish an innumerable quantity of living creatures, the almost perpetual destruction and regeneration of which communicate to water that degree of corruption and putrefaction, which renders its use so dangerous. It is not, therefore, from the water itself, but from the continual decomposition of the substances dissolved in it, that its disposition to putrefaction arises.

From what has been said, then, it evidently appears that the first means of preserving from putrefaction water which we are obliged to keep in wooden vessels, or casks, consists in having these reservoirs perfectly clean. The smallest quantity of matter already corrupted being left in them, acts as a real ferment, and very quickly disposes the fresh water, with which these vessels are filled, to become putrid in the same manner. For this reason, it is advised* that the casks or other vessels be well washed with hot water and sand, or with any other substance capable of removing the mucilaginous particles, and afterwards that a certain quantity of powder of charcoal be employed, which will entirely deprive such casks, or other vessels, of the musty or putrid smell they may have contracted. When water is preserved by having certain substances mixed with it, these substances act either by their anti-putrescent powers, or by mechanically absorbing the putrified particles. Vitriolic acid possesses the first of these properties, and powdered charcoal fulfils the second intention in a very striking manner, and the effect of the latter is rendered much more speedy by using it along with the former.

Proportions of Charcoal and Vitriolic Acid, &c.—From experiments made to ascertain in what proportions these two substances might be advantageously used together, it was found that one ounce and a half of powdered charcoal, and twenty-four drops of the concentrated vitriolic acid (sulphuric acid), are sufficient to purify three pints and a half of corrupted water, and do not communicate to it any sensible acidity. This small quantity of vitriolic acid renders it unnecessary to use more than one third part, at most, of the charcoal powder which would be wanted if the acid were not used; and the less of that powder employed, the less the quantity of water lost by the operation, which in sea voyages is an object worthy of consideration. In proportion to the quantity of acid used, the quantity of charcoal may be diminished or augmented, and it should be observed, that all acids produce nearly the same effects. Neutral salts also, particularly nitre and sea salt, may be used for the purpose in question, but vitriolic acid is certainly preferable to any of these. Water purified by means of this acid and charcoal, will keep a longer time than that which is purified by charcoal alone.

The cleanness of the casks in which water is kept during sea voyages, is an object which should never be neglected, and it would not be amiss if the operation were repeated every time they are about to be filled with fresh water. Six or eight pounds of charcoal are advised to be used for each cask, it being better to use too much than too little, and as much of the vitriolic acid as is sufficient to communicate to the water a scarcely perceptible degree of acidity. To prevent the charcoal from settling at the bottom of the cask in the form of a paste, it will be proper to stir the whole together with a stick, at least twice every week, by which means the charcoal will be better dispersed through the whole mass of water, and, consequently, will perform its office more completely.

Properties of Charcoal and Vitriolic Acid.—Powder of charcoal and vitriolic acid are two anti-putrescent substances. The first prevents the water from acquiring that yellow colour, which it usually contracts by time, and the acid particularly contributes to clarify the water, which the powder of charcoal, when employed alone, generally renders turbid. If we wish to make use of the water so preserved, it should first be tried, by passing a small quantity of it through a strainer, in the form of a jelly bag filled with powder of charcoal: such a strainer, or bag, should always be in readiness, to be made use of for this purpose.

Directions for purifying any given

* See Mr. Lowitz's Memoir, read at the Economical Society at St. Petersburgh.

quantity of corrupted Water.—When it is intended to purify any given quantity of corrupted water, we should begin, by adding to it as much powder of charcoal as is necessary to deprive it entirely of its bad smell; and in order to ascertain whether the quantity added be sufficient to clarify the said water, a small quantity of it may be passed through a linen bag, two or three inches long: if the water thus filtered has still a turbid appearance, a fresh quantity of powdered charcoal must be added, until it becomes perfectly clear. The whole of the water may thus be passed through a filtering bag, the size of which should be proportioned to the quantity of water. If vitriolic, or any other acid can be procured, a small quantity of it should be added to the water before the charcoal powder is used, the quantity of acid being regulated in proportion to the state of putridity in which the water is actually found, and which should be added in quantity sufficient to communicate to the water a degree of acidity just perceptible to the taste.

If the water be merely intended for dressing meat and vegetables for the ship's company, instead of acid, such a quantity of sea salt as would have been proper for seasoning the above articles may be employed. Saline substances, like acids, hasten the effects of the charcoal powder. By making use of acids (as has already been observed) a much less quantity of powdered charcoal is necessary; and so easy is the process to any one accustomed to operations of this kind, that four or five minutes only are required to render several gallons of putrid water fit to drink. In like manner, to improve the taste of those spring waters which naturally have an hepatic flavour, and are therefore unpleasant to use, nothing more is necessary than to filter them through a bag, half filled with powdered charcoal. If such waters are not very much loaded with mucilaginous particles, the addition of an acid is not necessary.

Method of preserving Charcoal on Board of Ships.—Powdered charcoal is a very light substance, a quality which, perhaps, may appear embarrassing, on account of the room it will take up in a ship, supposing the quantity of it to be in proportion to the quantity of water taken on board. The following is the result of Mr. Lowitz's experiments, relative to the space required for storing charcoal.

First: four ounces and a half of powdered charcoal, a quantity which is sufficient to purify three pints and a half of water, when no acid is made use of, take up as much space as sixteen ounces of water; but if this powder be strongly compressed, it will take up only the space of nine ounces of water; consequently, it would require two casks of powdered charcoal to purify eleven casks of water. Secondly, an ounce and a half of powdered charcoal is sufficient to purify three pints and a half of water, provided a small quantity of vitriolic acid, or sea salt, is at the same time made use of. One cask of powdered charcoal, therefore, if tightly packed, is sufficient for seventeen casks of water.

In another experiment made on this subject, it was found that six drachms of powdered charcoal were sufficient to deprive three pints of water of its bad smell, and to render it perfectly clear, provided, at the same time, twenty-four drops of vitriolic acid were added. In this way, therefore, one cask of powdered charcoal would be sufficient for thirty-four casks of corrupted water. These experiments, however, must be considered as liable to some variation, for, in order to obtain effects equal to those related, the charcoal powder must be prepared with the greatest care. It must also be observed, that though the above small quantity was found sufficient to deprive the water entirely of its bad smell, and to render it very clear, a larger quantity will be required to deprive it of its bad taste.

In order to save the charcoal powder on board of ships, as it is an article not easily procured at sea, the powder that has been used should not be thrown away; for if it be afterwards well dried, and again beat to powder, it will, by that means, acquire new surfaces, and serve a second time to purify a quantity of water, almost as great as that for which in the first place it was used. And, indeed, it may even be applied to the same purposes, after it has been frequently used, in the same manner; as, by making it red hot, in a close vessel, it will thereby resume its purifying properties. This process is, doubtless, a troublesome one on shipboard; but it is possible, under some circumstances, that it may be rendered less difficult.

As on board of all ships there is every day a fire, economy suggests that the charcoal of the wood which is used should be saved, and instead of letting it burn to ashes, it should be extinguished by water, or other means, and kept for use when wanted.

The cinders of pit-coal, provided they are perfectly burnt, and reduced to powder, may serve, in cases of necessity, for the purification of water; but when this kind of coal is made use of, no acid of any kind must be added to the water, as the metallic particles which pit-coal contains, even after it is thoroughly burnt, might, if acids were employed, communicate dangerous qualities to the water.

It is proper here to observe, that charcoal takes from the water a part of the acid which has been made use of. If two drops of sulphuric acid (oil of vitriol) are put into four ounces of water, the water will become sensibly acid; but this acidity will immediately disappear, if a small quantity of powdered charcoal be added to the water.

WELSH RABBIT. — Toasted cheese and bread. Dr. King, in his Art of Cookery, eulogizes this piquant morceau in the following strain:

"Happy the man that has each fortune tried,
To whom she much hath given, and much denied;
With abstinence all delicates he sees,
And can regale himself on toast and cheese."

It is made in the following manner: upon a slice of bread cut about an inch thick, the crust pared off, and slightly toasted, so as just to brown it on one side, lay a piece of good, fat, mellow Cheshire or double Glo'ster cheese, a quarter of an inch thick, not so big as the bread by half an inch on each side. Pare off the rind of the cheese; cut out all the specks and rotten parts, and lay it on the toasted bread, on a cheese-toaster; carefully watch it that it does not burn, and stir it with a spoon to prevent a pellicle from burning on the surface. Season it *secundum gustum* with good mustard and salt.

WHEATEAR. — A small bird, esteemed very delicate food. It is dressed and eaten in the same manner as larks.

WHEAT (*Triticum*).—The seeds of the *Triticum hibernum*, and *æstivum* of Linnæus, are so termed. It is to these plants we are indebted for our bread, and the various kinds of pastry and confectionery. The wheat, after being thrashed and winnowed, is ground between two millstones, and then sifted to obtain its farina or flour. The farina of wheat may be separated into its three constituent parts, in the following manner: the flour is to be kneaded into a paste with water in an earthen vessel, the water continuing to pour upon it from a cock, which, as it falls upon the paste, takes up from it a very fine white powder, whereby it acquires the colour and consistency of milk. This process is continued till the water runs off clear, when the flour will be separated into three distinct parts—namely; a grey elastic substance that sticks to the hand, which, owing to its properties, has acquired the name of the *glutinous*, or *vegeto animal* part; a white powder which precipitates to the bottom of the liquid, and is the *fæculum* or starch; a substance which remains dissolved in the water, which appears to be a kind of mucilaginous extract.

The word corn, in the general acceptation of the term, denotes either a genus of plants which have all a grain or an ear fit for bread, the ordinary food of man (see *Bread*), or the grain, or seed, of that plant, separated from the spica, or ear. In the commerce of grain it generally means wheat; but the farmers rank among the number of corns, several other grains, as rye, barley, &c. Authors are much deceived concerning the discovery and culture of corn. The common opinion, however, is, that in the first ages men lived on the spontaneous fruits of the earth, as acorns, &c., having neither the use of corn, nor the art of preparing or rendering it fit for consumption.* Ceres has the credit of being the first that pointed out the use of this plant, on which account she was ranked among the gods: and hence Ceres is metaphorically called both *bread* and *corn*, as the word *Bacchus* is sometimes used figuratively to signify wine.

"Bacchus and Ceres, pow'rs divine,
Who gave us corn for mast,* for water, wine."

DRYDEN'S VIRGIL.

The process attending the cultivation of corn is well described in the following lines:—

"The husbandman
Pursues his cares; his plough divides the glebe;
The seed is sown; rough rattle o'er the clods
The harrow's teeth; quick weeds his hoe subdues;
The sickle labours, and the slow team strains,
Till grateful harvest-home rewards his toils."

Independently of changes already mentioned, flour, from whatever species of corn it may be obtained, is likewise disposed to the vinous fermentation, on account of its saccharine contents. The aptitude for fermentation of these farinaceous seeds increases, if they first be converted into malt; inasmuch as by this process the gluten (see *Gluten*), which forms the germ is separated, and the amylaceous or starchy part appears to be turned into saccharine matter, (see Fermentation of *starch* and *malt*).

WHEAT, BUCK.—(*Polygonum Fagopyrum*). This grain constitutes the principal food of the inhabitants of Russia, Germany, and Switzerland.

WHEAT, EASTERN BUCK. (*Polygonum Divaricatum*). The roots reduced to a meal, are the ordinary food of the Siberians.

WHEAT, INDIAN.—See *Zea Mays*.

WHEAT, TURKEY.—A native of America, where it is much cultivated, as it is also in some parts of Europe, especially in Germany and Italy.

* The Athenians pretend that it was among them that the art of raising corn began; and the Cretans, Sicilians, and Egyptians lay claim to the same. Some think that the claim of the Sicilians is best supported, that being the country of Ceres; others, however, maintain, that it was in Egypt that the cultivating this grain had its origin. And it appears from both sacred and profane history, that Egypt was anciently the most fertile of all other countries in corn; furnishing with it a considerable part of the people subject to the Roman empire, and was therefore called *the dry nurse of Rome and Italy*.

* Mast is the fruit of the oak and beech.

There are several varieties of Turkey wheat, differing in the colour of the grain, and which are frequently mixed in our gardens by way of curiosity, and by which the plant is well known. It constitutes the chief bread corn in some of the southern parts of America; but, since the introduction of rice into Carolina, it is but little used in the northern colonies. It makes a principal part, too, of the food of the poor people in Italy and Germany.*

* This is the sort of wheat mentioned in the book of Ruth, where it is said that Boaz treated them with parched ears of corn dipped in vinegar. This method of eating the roasted ears of Turkey wheat is still practised in the East: they gather in the ears when about half ripe, and having scorched them to their minds, eat them with as much satisfaction as we do the best flour bread. In several parts of South America, the ripe corn is parched, and never made into bread, but ground between two stones, mixed with water in a calabash, and thus eaten. The Indians make a sort of drink from Turkey wheat, which is called *bici*—a liquor of a very windy and inebriating nature, with nearly the same taste as sour small beer. But it is not used in common, the natives being too indolent to make it often; it is therefore kept for the most part to celebrate their feasts and weddings, at which time they get intolerably intoxicated with it. The manner of making their drink is as follows: a parcel of corn is steeped in a vessel of water till it becomes sour; after which the old women, being provided with calabashes for the purpose, chew some grains of the corn in their mouths, and, spitting it into the calabashes, empty them, spittle and all, into the sour liquor, having previously skimmed off the latter into another vessel. The chewed grain soon excites a fermentation; and when this subsides, the liquor is drawn off from the dregs, and set aside till wanted. In some of the South Sea islands, where each individual is his own lawgiver, it is no unusual thing for a near relation to exonerate a murderer for a good debauch of *bici,* the name of this liquor.

WHEAT, TO TEST AND ANALYSE.—A grain of wheat is naturally composed of an outer rind or husk, called the skin or bran, a layer of soft, sweetish substance, constituting about half the grain, which is not easily ground to fine powder, and forms the coarsest of the flour; and the kernel or heart, which is hard and mealy, is easily ground, and forms the finest part of the flour. The chemical elements of wheat, are starch, gluten, and sweet mucilage, the proportions of which vary considerably, according to the season, or to the season of the year. The method of analysing wheat is to form the flour into a stiff paste, and knead it under water till it becomes grey, and somewhat semi-transparent; then let a stream of water play upon it, while it is being thoroughly kneaded. The paste will now be the gluten of the wheat; the starch will fall to the bottom of the water; and the mucilage will be procured in the form of a syrup, by evaporating the liquor in a warm place. By this method, the proportions of each of these substances in any specimen may be easily and pretty accurately ascertained.

WHET.—The act of giving an edge or sharpening. Any thing that promotes appetite or hunger. A provocative. A devil; or high-seasoned article.

WHEY.—The liquid which remains after the separation of the curd; a thin and almost transparent fluid, of a yellowish green colour, and a pleasant sweetish taste. It usually contains a portion both of curd and butter; the former of which may be separated by a boiling heat, in the form of coagulum. The buttery matter also separates by heat, especially if the whey be previously allowed to become sour. In its recent state whey contains some acetic acid. When whey has been deprived of the butter and curd as much as it can, and is slowly evaporated, it yields the peculiar substance termed "*sugar of milk*," which may be obtained by clarification with the whites of eggs, in the form of crystals. The presence of this saccharine matter held in solution in whey enables that fluid to undergo the vinous fermentation; and is accordingly employed by the Tartars for making a sort of wine called Koumiss. For this purpose the milk of mares is chosen, as it contains a larger proportion of saccharine matter than that of the cow. Whey also contains several saline bodies, viz., *muriate of potass, phosphates of lime and of iron, and sulphate of potass;* also a peculiar animal matter, which gives a precipitate with infusion of galls, and affords carbonate of ammonia by distillation.

From these investigations the constituents of skimmed milk from the cow appear to be, according to Majendie—

Water.	
Curd, with a little cream,	926.75
Sugar of milk, ...	28
Muriate of potass, . .	35
Phosphate of potass, . .	1.70
Lactic acid, acetate of potass, with a trace of lactate of iron, ...	0.25 6
Earthy phosphates . . .	0.30
	10 0

To make Whey.—Cows' milk, one pint and a half; cream of tartar, half an ounce; boil the milk, add the salt, and strain.

2. *Alum Whey.*—Cows' milk, one pint and a half; alum, two drachms and a half; then boil together and strain.

3. *Mustard Whey.*—Cows' milk, two pints; bruised mustard seed, two ounces; boil together and strain.

4. *Wine Whey.*—Cows' milk, two pints; spring water, one pint; boil, and add white wine, half a pint.

5. *Clarified Whey.*—Cows' milk, six pints; rennet, *q. s.* Let it stand in a warm place for some hours, strain, add the whites of three eggs, and cream of tartar, half a drachm; boil and filter through paper.

Whey is highly nutritive, diluent, aperient, and diuretic. It is given in consumptions, dysenteries, jaundice, and other diseases; either alone or mixed with mineral waters, and sometimes impregnated with the juice of medicinal herbs.

WHISKEY—(From usquebaugh, the Irish nomenclature for it). A diluted alcohol obtained from distilling malt.— See *Usquebaugh* and *Ardent Spirits.*

WHITE BAIT.—This fish, long supposed to be the fry of some large species, and generally thought to be that of the barbel, is now considered as that of a distinct species. It is reckoned an epicurean dish, but in the estimation of some gourmands there are other small fry at least equal to it.

WHITING.—A sea fish that often comes near the shore. It is very common in our markets, and is valued for the goodness of its taste. It is nutritive, produces good juice, sits light on the stomach, and is easily digested.

WILD BOAR.—The wild boar is very nourishing, and is food that does not waste; but yet easier of digestion than common pork. It produces gross humours, and is not adapted to idle or sedentary habits. The flesh of the wild boar is good, chiefly in winter, for young people of a hot and bilious constitution, for those who have strong stomachs and work hard. That is best which is fat, and has been well hunted.

The wild boar is not of so moist a nature as the common hog, owing to the exercise and different food it lives upon: its flesh consequently is not so viscous, is more agreeable to the taste, and easier of digestion. The flesh is very nourishing, but, as observed, proper only on strong stomachs and those who use a deal of exercise.

WILD CUCUMBER.—The wild cucumber differs from that generally used for food; it contains a viscous and very sharp juice; which being evaporated to a certain consistence is called elaterium, used medicinally in dropsical complaints, and is generally of a very active nature.

WILD DUCK.—There are several sorts of wild ducks, differing one from another in bigness, form, colour, and cry.—See *Duck*, *Teal*.

WILD PIGEONS—See *Pigeons*.

WINE.—Wine is defined a brisk, agreeable, spirituous, and cordial liquor, extracted from vegetable bodies, and fermented. All sorts of vegetables, fruits, seeds, roots, &c. may be made to afford it; as grapes, pulse, pease, turnips, radishes, and even grass. The word wine, however, is appropriated in a more particular manner to the fermented juice of the grape. Of the various sorts made in France, Germany, Spain, Portugal, Hungary, and Italy, concerning the acquaintance which our ancestors had with wine, it has been conjectured that the Phœnicians might possibly have introduced a small quantity of it: but the liquor was very little known in our island before it was conquered by the Romans.

All vegetables, nutritive and animal matters which contain sugar ready formed, are susceptible of spirituous fermentation. For instance, wine may be made of all the juices of plants, the sap of trees, the infusions and decoctions of farinaceous vegetables, the milk of frugiverous animals; and lastly, it may be made of all ripe succulent fruits. But of all other substances susceptible of the spirituous fermentation, none is capable of being converted into so good wine as the juice of the French grapes, or of other countries that are nearly in the same latitude or in the same temperature. The grapes of warmer climates, and even those of the southern provinces of France, do indeed furnish wines that have a more agreeable, that is, more of a saccharine, taste; but these, though they are sufficiently strong, are not so spirituous as those of the provinces near the middle of France: at least, from the latter wines the best vinegar and brandy are made. A temperate use of wine is conducive to health. The functions of both body and mind are roused and facilitated by it. It has a powerful effect upon the organs of digestion, the circulation and the nervous system, by promoting digestion, strengthening the action of the heart and arteries, and raising the spirits. Such is its beneficial operation when moderately used. Taken in excessive quantities, it produces opposite effects, destroying the powers of the stomach, inducing emaciation and debility, and occasioning inflammation and obstruction in the liver, lungs, &c. Whence gout, palsy, dropsy, consumption, diabetes, &c. In a dietetical point of view, wines are to be considered as they are either acid, sweet, soft, or austere. The acid wines, of which the hock and Rhenish are the most noted, are the least heating and the most diuretic. The sweet, such as the Frontignac, Malaga, Tent, Cape, are heating and sudorific. The soft or acidi-dulcescent wines, such as Champagne, claret, Burgundy, Madeira, &c., are less stimulating than the sweet, and more cordial than the acid wines. Of the austere and astringent kind, that which is the most used in this country is red port, which, when it has not been mixed with too large a proportion of brandy, is a generous and stomachic wine, well suited to the generality of British constitutions. All wines considered as medicines are very valuable, and would be still more so, if the constitution of the English were not so much habituated to them. Wherever the vital powers are exhausted by great evacuations, by over excitement, and where there is not any tendency to inflammation, they prove the most useful and most grateful of all—cordials to the stomach.

The number of wines used as medicines is not very great; Madeira, port, sherry, hock, claret, and some small French wines. In moderate quantity they are useful towards the end of low fevers, and even of bilious ones when the stomach is tolerably clear; in confluent small-pox, in dysentery, particularly that of camps and ships, which is generally attended with putrid fever. In many nervous complaints; in hooping cough, nothing is better after the first week or fortnight; and in women exhausted with fluor albus or hysteria. It is one of the best cordial tonics and antispasmodics; excites the action of the heart and arteries; increases the secretions and excretions; throws out in health what ought to be thrown out, but which by weakness of action is retained; increases the secretion of the solids, and thus tends indirectly to the nutriment of the system.

In typhus fever and other diseases, sago, tapioca, arrow-root, and other nutriments, would not sit on the stomach without the addition of wine; it stimulates the chylœpætic viscera. It is also a well-founded observation, that those who indulge in the use of wine are less subject to fevers of the malignant and intermittent kind; and delirium, which is the consequence of excessive irritability, and a defective state of nervous energy, is often entirely removed by the free use of it. Wine is never proper when there is local inflammation or strong arterial action. Some peculiarities of constitution also prevent its use. Thus some have a disposition of stomach with which the least acid disagrees; in such even port will produce heart-burn and spasm of the stomach; here spirits and water must be substituted. Wherever the patient is bilious—in bilious and putrid fevers, acidulated wines are preferable, as hock, the small wines of Languedoc and Burgundy, and claret: the last is the best wine in fevers, to those who are not accustomed to wine; but it produces heart-burn in those who are used to port. Good wine, which "needs no bush," is an admirable cordial; and when used in moderation, answers many excellent purposes of life and health. Plutarch, in his Life of Cæsar, informs us, that when he had taken Gomphi, a town in Thessaly, by assault, he not only found provisions for his army, but physic also: for there they met with plenty of wine, of which they drank freely. Warmed with this, and inspired by the jolly god, they merrily danced along, and thus shook off the diseases contracted by their preceding diet, and changed their whole constitution. Wine has been styled the "milk of old age." Dr. Johnson observed, that it was much easier to be abstinent than temperate,—that no man should habitually take wine as food till he have passed the age of thirty at least. Another writer (see *Trotter on Drunkenness*, p. 151) says, no man in health can need wine till he arrives at forty; he may then begin with two glasses in the day: at fifty he may take two more. See also, *Inquiry into the Effects of fermented Liquors, by a Water-drinker*, 18mo. 1820; *Lettsom on the Effects of Hard-drinking*, &c.

The following is Brande's valuable table of the quantity of spirit in different kinds of wine:—

	Propn. of spirit per cent.
1. Lissa . . .	26.47
Ditto . . .	24.35
Average .	25.41
2. Raisin wine . .	26.40
Ditto . . .	25.77
Ditto . . .	23.20
Average .	25.12
3. Marsala . .	26.30
Ditto . . .	25.05
Average .	25.09

		Propn. of spirit per cent.
4.	Madeira	24.42
	Ditto	23.93
	Ditto (sircial)	21.40
	Madeira	19.24
	Average	22.27
5.	Currant wine	20.55
6.	Sherry	19.81
	Ditto	19.83
	Ditto	18.79
	Ditto	18.25
	Average	18.25
7.	Teneriffe	19.79
8.	Colares	19.75
9.	Lachryma Christi	19.70
10.	Constantia, white	19.75
11.	Ditto, red	18.92
12.	Lisbon	18.94
13.	Malaga (1666)	18.94
14.	Bucellas	18.49
15.	Red Madeira	22.30
	Ditto	18.40
	Average	20.35
16	Cape Muschat	18.25
17.	Cape Madeira	22.94
	Ditto	20.50
	Ditto	18.11
	Average	20.35
18.	Grape wine	18.11
19.	Calcavella	19.20
	Ditto	18.16
	Average	18.65
20.	Vidonia	19 25
21.	Alba Flora	17.26
22.	Malaga	17.26
23.	White Hermitage	17.43
24.	Rousillon	19.00
	Ditto	17.26
	Average	18.13
25.	Claret	17.11
	Ditto	16.32
	Ditto	14.08
	Ditto	12.91
	Average	15.10
26.	Malmsey Madeira	16.40
27.	Lunel	15.52
28.	Sheraaz	15.52
29.	Syracuse	15.28
30.	Sauterne	14.22
31.	Burgundy	16.60
	Ditto	15.52
	Ditto	13.00
	Ditto	11.95
	Average	14.57

		Propn. of spirit per cent.
32.	Hock	14.37
	Ditto	13.00
	Ditto (old in cask)	8.88
	Average	12.08
33.	Nice	14.63
34.	Barsac	13.86
35.	Tent	13.20
36.	Champagne (still)	13.80
37.	Ditto (sparkling)	12.80
38.	Ditto (red)	12.56
39.	Ditto (ditto)	11.30
40.	Cote Rote	12.32
41.	Gooseberry wine	11.84
42.	Orange wine, average of several samples made by a London manufacturer	11.26
43.	Tokay	9.88
44.	Elder wine	9 87
45.	Cider, highest average	9.87
	Ditto, lowest ditto	5.21
46.	Perry of 4 samples	7.26
47.	Mead	7.32
48.	Ale (Burton)	8.88
	Ditto (Edinburgh)	6.20
	Ditto (Dorchester)	5.56
	Average	6.87
49.	Brown Stout	6.80
50.	London Porter (average)	4.20
51.	Ditto small beer (ditto)	1.28
52.	Brandy	53.39
53.	Rum	53.68
54.	Gin	51.60
55.	Scotch Whiskey	54.32
56.	Irish ditto	53.90

WINES, ADULTERATION OF.—Wines differ in many particulars, but what most interests the medical practitioner is their quantity of alcohol. They all consist of alcohol, water, and a peculiar acid; there is also the colouring matter, and an essential oil; other ingredients are also very frequently added for different purposes, as cochineal for colouring, sulphuric acid or alum to render some wines rougher; and cerussa acetata (sugar of lead) to render others sweeter which have become acid; this latter is the only sophisticative ingredient we have to fear; all other substances, as opium, coculus Indicus, alum, &c., when compared with this, are of little consequence; they inebriate and produce headach, but are not poisonous.

If there be sugar of lead in wine, it may readily be detected by any kind of sulphuret soluble in water; there will be a precipitate of a brown or black powder; the acid of the wine unites to the alkali of the sulphuret, and the sulphur uniting to the oxide of lead, forms this black powder. If no lead be present, a precipitate of a white powder will ensue; here the precipitate of the sulphur, the acid of the wine, combining with the alkali of the sulphuret. If there be copper or iron in wine, there will also be a precipitate of a black powder; but the wine impregnated with copper will be discoverable by the taste; and iron is not dangerous. To know if the precipitate be lead, if it be melted on charcoal, it will then run into globules. Alum may be discovered by pouring on it a little strontia or barytes. If there be alum, there will be a precipitation on the sides of the glass, which will be close like clay. For the detection of lead in wines, a test invented by Dr. Hahneman, and known by the name of Hahneman's wine test, is recommended for its delicacy. It is prepared by putting together into a small phial, sixteen grains of sulphuret of lime, prepared in the dry way, and twenty grains of cream of tartar. The phial is to be filled with water, well corked, and occasionally shaken for the space of ten minutes. When the powder has subsided, decant the clear liquor, and preserve it in a well-stopped bottle for use. This liquor, when fresh prepared, detects the presence of lead by a dark coloured precipitate.—*Henry's Chemistry*, vol. ii, p. 275.

Wine may also be sophisticated by alcohol, especially in taverns, where the additions are, to one hogshead of port, half a hogshead of cider to give it bulk; and to give it strength and to keep it, one third of English spirit; alum also is added, to give it roughness, and cochineal, as already observed, to colour it. In this condition it is more hurtful than genuine wine, in consequence of the brandy not entirely incorporating with the wine, nor combining chemically with it, as alcohol, by fermentation. To know if the spirit is added after the wine is made:—

1. The spirit may easily be had by distillation at a low temperature.

2. Pour some red wine that is suspected into a vessel with a long neck, and into another genuine wine; then add perfectly dry potash sufficient to saturate them; when the wine to which the spirit was added will have alcohol swimming at the top, while the other will not.

Alcohol may be obtained from every wine by distillation, and an acid can be discovered by a paper dyed blue with litmus: but the proportions of these ingredients are very different. The quantity of alcohol makes them more or less stimulant; but the strong wines, as port, Madeira, and sherry, yield much more alcohol than they naturally possess, as foreign merchants are obliged to raise them by pure alcohol to the English standard before they leave their country. Another difference is, that the acid in some is very abundant, as in Rhenish, claret, hock &c. Again, they differ in their flavour according to their quantity of saccharine matter. Some dry, strong wines have all their saccharine matter turned into alcohol; but there are many where the saccharine matter in the juice is so excessive, that as soon as a small part of it is converted into alcohol, it puts a stop to the vinous fermentation; nor is this yet properly explained—thus, in Tokay, Cape wine, and some others. Some have an astringent property, as port; still very often this property is superadded; but port is naturally more astringent. For the individual history of the wines of respective countries, &c., see *those of the following, marked thus †, under their respective heads:*

Burgundy wine	Lebanon,
† Champagne,	Lesbian,
Chios,	† Madeira,
† Claret,	† Malaga,
Constantia,	† Malmsey,
Corsican,	Muscadine,
† Domestic,	Opimian,
† English,	Palm,
Falernian,	† Port,
Florence,	† Rhenish,
† French,	† Sack,
† German,	† Schiras,
† Greek or Turkey	† Sherry,
Helbon,	† Spanish,
† Hock,	† Tokay.
† Italian,	

It would appear that the ancients were aware that lead both ameliorated harsh wine and preserved it from acidity, and that the acid of the wine had the power of dissolving it; for, when the Greek and Roman wine-merchants wanted to know whether their wine was spoiled, they immersed in it a plate of lead, which could only be to observe whether the colour of the lead was changed by erosion. They were also acquainted with a mode of improving and clarifying wine, by boiling it with lime or gypsum; a method supposed to be still practised in some parts of Spain, and in the island of Zante: but it is considered no farther prejudicial than as it tends, if used in too large a quantity, to deprive the liquor of its spirituous parts. That the custom is of very ancient date in the former country, is proved by a decree of the states of Arragon, in 1348. The presence of metals in wine may be detected by the application of the arsenical liver of sulphur; but its use is not decisive of the particular kind employed, as it precipitates all metals black without distinction.

Among the innocent articles with which wine has been mixed, we find mustard and mugwort mentioned in the year 1484; and in the following century, milk was included in an imperial ordinance against adulteration. The effects of the latter, however, are only to clarify the liquor, and to render the tint more pale, and are otherwise wholly imperceptible: it was known to the ancient Greeks; and is still used in small quantity, and for white wine alone. The Greeks and Romans used also to boil much of their wine until only a certain portion of it remained; and when by this operation it was deprived of some of its watery particles, it was mixed with honey and spices. This method, with the exception of the mixture of spice and honey, is still applied to some kinds of new wine in Italy; where it is now, however, used for salad and sauces, under the name of *musco catto.* It is said to be also employed in the preparation of the Spanish and Hungarian sweet wines; but the fact is, it is obscured in considerable doubt. There is also another mode of preparing wine, which cannot properly be called adulteration, but which was formerly considered so unwholesome, as to have been prohibited in Germany in 1472. It is effected by stopping the fermentation at a certain period, by which the original sweetness of the grape is in a great part retained, and on being exposed to the air, the fermentation recommences. The prejudice against this method no longer exists, and it is frequently employed in Germany and France. The common appellation of wine thus treated, is *stum wine;* but the French, who prepare considerable quantities in this manner, at Bordeaux, designate it *vin en rage.*

Brazil wood, or the husks of elderberries, and bilberries, are employed to impart a deep rich purple tint to red port of a pale red colour; gypsum is used to render cloudy wine transparent: an additional astringency is imparted to immature red wines by means of oak-wood sawdust, and the husks of filberts—by these, and such means, it is that a mixture of spoiled foreign and home-made wines, is converted into the wretched compound, frequently sold as genuine port. Various expedients are resorted to, for the purpose of communicating particular flavours to insipid wine. Thus, a nutty flavour is produced by bitter almonds; and the ingredients employed to form the *bouquet* of high-flavoured wines, are sweet-briars, orrice root, celery, cherry and laurel water, and elder flowers. Also, claret can be squeezed out of the sloe, and sparkling champagne from an apple; and thus are metamorphosed the health stealing drugs whence spring many of the afflictions of the great, from which the poorer classes are exempted. Wines are usually *doctored*, as it is called, in order to give them peculiar flavours, and render them similar to some celebrated grape wines. Thus, bitter almonds are added to give a nutty flavour; sweet-briar, orrice root, celery, cherry, laurel water, and elder flowers, to form the *bouquet* of high flavoured wines; alum, to render young and meagre red wines bright; Brazil wood, cake of pressed elder berries, and bilberries, to render pale faint port of a rich deep purple colour; oak sawdust, and husks of filberts, to give additional astringency to unripe red wines; and a tincture of the seeds of raisins, to flavour fictitious red wines. Wine is also coloured with red beet, but in this case it is rendered colourless by lime water.—See *Tests*.

WOODCOCK.—Woodcocks are found in almost every part of the world; and are served up to the best tables for their delicious taste. They appear at all times, but more especially in winter, for then they leave the mountains on account of the snow. They resemble a partridge, but their bill is considerably longer. They live upon flies and worms. The snipe is another kind of woodcock, differing only from the other by not being so big. The snipe is excellent eating, and is more easily digested than the woodcock. The good taste of both these birds proceeds from the purified juices contained in them; as also from their volatile and exalted principles: it is the same principles also that make the flesh of these birds restorative, and corroborant. They agree in winter with all ages and constitutions, provided they be used moderately. Woodcocks should not be drawn, as the trail is, by the lovers of "*haut gout*," considered a "*bonne bouche*." This bird has so insinuated itself into the favour of refined gourmands, that the same honours are paid to it as to the grand lama, making a ragout of its excrements, and devouring them with ecstasy—(see *Almanach des Gourmands*, vol. i. p. 56). The wing of the woodcock is always very tough, that of the partridge very tender. The breast of all birds is the most juicy and nutritious part.

WORMWOOD.—A bitter tonic plant, of considerable service in indigestion and low spirits. It has also been used with advantage in ague, gout, and scorbutic complaints. Its power in expelling maw-worms is well known. The infusion of wormwood is made by pouring a pint of boiling water on an ounce of the plant, of which two tablespoonsful may be taken twice or three times a-day. Infused in ale, wormwood makes what is called purl.

WORT.—By wort is understood the oily, spirituous part of the malt, obtained by infusions of warm water that lie and soak with the grain, one, two, or more hours, which gradually opens the pores, whereby it gives out its virtues more freely: by the further assistance of a cover of fresh malt, which here prevents the escape of the finer, and more penetrating parts of the water by steam, and causes a more equal distribution of them throughout the body of the mash, by a due confinement of the heat; and being swelled and saturated to its utmost distension, returns the overplus liquor charged with the sweet, balsamic, nutritive part of its flour; and so continues to give out the same in regular tincture, by the several lodgings over, or washings, that leisurely follow, and are constantly discharged by the cock without stopping, till the proper quantity is got off in a fine transparent stream.

It would appear that neither cold nor boiling water will produce a good solution of saccharine matter from malt; cold water takes up little or none of the sugary principle of malt, and forms a spiritless and ascescent drink; boiling water forms a mucilaginous fluid, which, whatever it may contain, cannot be drawn off from the grains, consequently it is lost. But water at a medium temperature acquires a full sweetness, and readily parts with the undissolved matter: though water of a high temperature (much under the boiling point) will dissolve or form a greater quantity of saccharine matter from the malt, it is, nevertheless, uneconomical; for the malt in such cases is usually a little set; and there is a loss of the liquor, because it is held involved in the pastry grains; the second mashing may lessen the loss, but will not compensate the deficiency. It is plain, therefore, that the first mashing should be made with warm water; the second with hot water and the third with still hotter; for in each succeeding mash, there is less risk of the malt setting, as the starchy matter has been removed. "In selecting a proper temperature for the water, the regulation of our choice will depend upon two qualities of it; namely, its sufficiency to extract the saccharine matter, and its insufficiency to set the goods. Both these points require attention for the attainment of the greatest quantity, as well as the best quality of the produce.—150° can never hurt malt of any kind, or under any circumstances of fineness of the yeast, or temperature of the air, or slackness of drying: for pale malt that has been dried, (provided the atmosphere does not exceed 50°), the heat of the first mash may be 170°; of the second 180°; and for the third, the heat may be, and never ought to exceed, 185°."—*Town and Country Brewery Book*, 1831.

The medicinal properties of wort are aperient, and antiscorbutic. From one to four pints daily have generally been directed. The proportion recommended in preparing it, is one measure of ground malt, to three equal measures of boiling water. The mixture must be well stirred, and left to stand covered three or four hours. It should be made fresh every day. The goodness of malt may be proved by the wort, in the following manner:—When a person uses more than one sort of malt, he may prove the goodness of it by the wort, by weighing a quart of the latter of each brewing, and that which is heaviest is best.

Y.

YAMS.—(*Dioscorea Alata**).—A root of a farinaceous and wholesome nature, much cultivated by the inhabitants of the West India islands, and is of great use to them in vic-

* The name of the plant which affords this esculent root, which, however, is obtained from their species—the alata, bulbifera, and sativa. They grow spontaneously in both Indies, and their roots are promiscuously eaten, as the potatoe is with us.

tualling their negroes. The white people also eat them with salted provisions, as well as make puddings of them, when ground down into a coarsish flour. These roots run as large as a man's thigh; they are of an irregular form, and of a dirty brown colour on the outside, but white and mealy within. They are roasted or boiled for food, and sometimes made into bread, for which they are an excellent substitute, as well as for potatoes. These plants grow wild in the woods in the island of Ceylon, and on the coast of Malabar, and they are supposed to have been carried from the East to the West Indies. There is a great variety in the colour, size, and shape of yams. Some are generally blue, or brown, round or oblong, and weigh from one pound to two. When dressed, they are esteemed nutritive, and easy of digestion, and are preferred to wheaten bread. In taste, they resemble the potatoe, but are more viscous. The negroes boil and mash them; they are also ground and made into bread and puddings. When they are to be kept for some time, they are exposed upon the ground to the sun, as onions are done with us, and when sufficiently dry, are put into dry sand in casks, and placed in a dry vault, where they remain often for many seasons, without losing any of their primitive goodness.

YEAST.—A substance generated during the vinous fermentation of vegetable juices and decoctions, rising to the surface in the form of a frothy, flocculent, somewhat viscid matter, the nature and composition of which are unknown. Its most remarkable property is that of exciting fermentation.—(See *Fermentation*). The following methods of making good yeast are easy and expeditious. Boil one pound of good flour, a quarter of a pound of brown sugar, and a little salt, in two gallons of water, for an hour, and when milk warm, bottle and cork it for use, for which it will be fit in twenty-four hours. One pint of this yeast will make eighteen pounds of bread. Again, to a pound of mashed potatoes (mealy ones are best) add two ounces of brown sugar, and two spoonsful of common yeast. Keep it moderately warm while fermenting.

N.B. This recipe is, in substance, from Dr. Hunter, who observes that yeast so made will keep well. No sugar is used by bakers, who add the pulp of potatoes to their rising.

Another Method.—Boil for half an hour two quarts of water, thickened with about three spoonsful of fine flour, and sweetened with nearly half a pound of brown sugar. When almost cold, put it into a jug, adding four spoonsful of fresh yeast; shake it well together, and let it stand uncovered near the fire for a day to ferment. There will be a thin liquor on the top; pour this off; shake the remainder, and cork it up for use. To make a half-peck loaf, a quarter of a pint of the above may be used.

To make Yeast for a whole Year, at little Expense.—"In Long Island," we are told by Mr. Cobbett, "they make *yeast cakes.* A parcel of these cakes is made *once a year.* That is often enough. And when you bake, you take one of these cakes (or more, according to the bulk of the batch), and with them raise your bread. The very best bread I ever ate in my life, was lightened with these cakes."

The materials for a good batch of cakes are as follows:—three ounces of good fresh hops, three and a half pounds of rye-flour, seven pounds of Indian corn-meal, and one gallon of water. Rub the hops, so as to separate them; put them into the water, which is to be boiling at the time, let them boil half an hour; then strain the liquor through a fine sieve into an earthen vessel. While the liquor is hot, put in the rye flour, stirring the liquor well and quickly, as the rye flour goes into fermentation. The day after, when it is working, put in the Indian meal, stirring it well as it goes in. Before the Indian meal be all in, the mess will be very stiff, and it will, in fact, be *dough*, very much of the consistence of the dough that bread is made of. Take this dough, knead it well, as you would a pie-crust; roll it out with a rolling-pin, as you roll out pie-crust, to the thickness of about a third of an inch. When you have it (or a part of it at a time) rolled out, cut it up in cakes with a tumbler glass turned upside down, or with something else that will serve the same purpose. Take a clean board (a *tin* may be better), and put the cakes to *dry in the sun*. Turn them every day, let them receive no wet, and they will become as hard as ship-biscuit. Put them in a bag, or box, and keep them in a place perfectly free from damp. When you bake, take two cakes of the thickness above mentioned, and about three inches in diameter, put them in hot water *over night*, having cracked them first; let the vessel containing them stand near the fire-place all night. They will dissolve by the morning, and then you use them in setting your sponge (as it is called), precisely as you would use the yeast of beer.

YORKSHIRE PUDDING.—Mix two spoonsful of flour with a pint of milk and three eggs, well beaten, add a spoonful of salt, and a little ginger grated; butter the pan, and put in the mixture. When browned by baking under the meat, turn the other side upward, that that may be browned also. It should be made in a square pan, and served up, cut in pieces, neatly arranged upon a dish. The richness of the pudding is increased according to the number of eggs put into it.

Z.

ZERO.—The point from which the scale of a thermometer is graduated: *e. g.* the thermometers of Celsius and Reaumur have their zero at the freezing point; that is, at the point at which water freezes, while the thermometer of Fahrenheit has its zero at that point at which it stands, when immersed in a mixture of snow and common salt.

ZESTS.—A term of art used by confectioners. The peel of oranges, lemons, or citrons, cut from top to bottom, in small slips, or zests, as thin as possible.

ZYMOME.—A tough, hard substance, though it does not possess the viscidity of gluten. It is insoluble in water and alcohol, but is dissolved in vinegar and mineral acids, by the aid of heat, and forms a soap with pure potass.

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20 Grs Lunar Caustic to 1oz of distilled water

to be applied with a Camel hair pencil