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* * Man Know Thyself. * *

DESCRIPTIVE CATALOGUE

OF THE

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CONTENTS.

	PAGE.
"THE HOUSE WE LIVE IN"	
Ultimate Elements	3—5
Proximate Principles...	5—7
Organs and Functions	7—8
Articles of Human Food, and what they are converted into	8–18
Osteology, Skulls, Pelvis	19–20
Embryology and Fœtal Development	20–24
Anatomical Creek Slave	22
Obstretic Preparations	24–28
Displacement of the Womb	24
Surgical Operations—Stone in the Bladder, Kidney, Urethra	28
Circumcision	29
Freaks of Nature—Extra Uterine	30
John Marshall's, M.D., F.R.C.S., Physiological Diagrams	31
Masturbation, Hermaphrodites...	32
Pathological Models	33–34
Sections of Lungs, Heart, Liver, Stomach	34–39
Brain, Muscle, Nerves, Bones, &c....	39–46
Extraordinary Super-Fœtation of Twins	46
Something Like a Miracle—Louisa Lateau	47–48
Extraordinary Freak of Nature—Fœtal Body in the Peritoneal Cavity of a Man	49
The Cæsarion Mode of Accouchement	50
Dissectable Models of the Venus, Eve, Tight Lacing, &c.	50–52
The Organs of Senses (dissectable), Eye, Ear, Tongue, Skin and Nose	53–55
Dissectable Models of Face, Larynx, Nose, &c. ...	56
Onanism, or Masturbation	57–59
Hermaphrodites, Proiapsus-Uteri, Hernia, and a series of Pathological Models	59–63

CATALOGUE OR GUIDE

TO THE

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"We next took refuge in the Anatomical Museum. There were not many persons present, and those who were appeared to be of the Operative and Working Classes.

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VISITORS ARE PARTICULARLY REQUESTED NOT TO TOUCH ANY OF THE ILLUSTRATIONS.

Models now arranged on the North (or left side), as the Visitor enters the Museum.

THE first three cases contain the materials of which "The House we Live In" is composed; also the quantity of Food, namely, Water, Gluten, Fibrine, Oils, Fats, Sugar, Starch, Mineral Matter, and Atmospheric Air, a "Man" will require and can consume daily.

In Case 1, are the ULTIMATE ELEMENTS. In the second, PROXIMATE MATTER; and in the third, FOOD ARTICLES; about 48 of which have been selected, and their contents, in their exact proportions of nutrition, given; so that the reader may learn at a glance the quantities of water, azotized articles of food—such as curd, caseine, albumen, gluten, fibrine; also, the non-azotized, namely—fat, oil (carbon), starch, gum, and sugar; also, the salts, namely—potass, phosphorus sulphur, lime, iron, magnesia; and lastly—husks and woody fibres, which are found in their raw material, out of which our bodies are reconstructed from

day to day, so that the visitor to the Museum will have an opportunity of inspecting these materials, in their exact proportions, for the building up of

"THE HOUSE WE LIVE IN."

In case 1. *Oxygen*, 111-lbs. (this, in its gaseous form, would occupy 750 cubic feet of space). Its combinations with bodies, when rapid, produces combustion, and in slower form oxidation. It serves to support life, and forms about 22 per cent. of atmosphere, to wit: one gallon of oxygen to four gallons of nitrogen, compose the air we breathe. Oxygen gas is one-ninth part heavier, and nitrogen is one-thirty-sixth part lighter, than air. One cubic foot of air weighs 537 grains, or nearly one ounce and a quarter.

2. *Hydrogen*, 14-lbs. (this, in its gaseous form, would occupy about 3,000 cubic feet of space). It is the generator of water; inflammable, colourless, and of extreme lightness. It also constitutes one of the elements of water, and of all organised bodies. Atmospheric air weighs fourteen-and-a-half times heavier than hydrogen.

3. *Carbon*, 21-lbs. 2-ozs. (will occupy 75 cubic feet of space in its gaseous state). An elementary substance, forming the base of charcoal, and graphite (or black lead). In its pure crystalised state it constitutes the *Diamond*. Carbonic acid gas is twice as heavy as the air we breathe. One gallon of this gas is found in 2,500 gallons of air.

4. *Nitrogen gas* (sometimes called *Azote*), 3½-lbs. (this would occupy about 20 cubic feet of space). It is a gaseous element, without taste, colour, or odour, forming nearly four-fifths of common air, and is incapable of supporting life.

5. *Fluorine gas*, 2-oz., made from Derbyshire spa and sulphuric acid.

6. *Chlorine gas*, 2-oz. 47-grs. This is of a green, or greenish-yellow colour, heavy; forms a constituent of common salt, and is used in disinfecting and in bleaching.

7. *Phosphorus*, 1-lb. 12-oz. 190-grs. A luminous and inflammable substance, prepared from urine and bone. Bone is composed of phosphorus and calcium.

8. *Calcium*, 2-lbs. Metallic basis of lime.

9. *Sodium*, 2-oz. 116-grs. A yellowish-white metallic element, soft, like wax, and lighter than water; the metallic base of soda.

10. *Sulphur*, 2-oz. 219-grs.: Brimstone. An elementary non-metallic substance, of a yellow colour, brittle, insoluble in water, burns with a blue flame, and emits a peculiar suffocating odour.

11. *Potassium*, 290-grs.: A bluish-white and lustrous metal, having a strong affinity to oxygen, with which it forms potash: it is lighter than water, and a powerful alkali.

12. *Iron*, 100-grs.: This metal is very widely diffused, and the most useful of all the metals.

13. *Magnesium*, 12-grs.: The undecomposed metallic base of magnesia, lustrous, and silvery in colour, fusible at a red heat, and malleable. It is largely used in medicine as a cathartic, and also as a remedy for acidity.

14. *Silicon*, 2-grs.; Flint-rock, basis of silicic acid. Nature employs it in making enamel for the teeth.

15. In Case 2 will be found the PROXIMATE PRINCIPLES, or MATERIALS, in their exact proportions, as found in an adult human being of the average weight:

1. *Water*, 111-lbs., which is composed of oxygen and hydrogen, in the proportion of 85 parts of the former to 15 parts of the latter, each by weight. One pint of water weighs one pound; one pint of common air 9 grains; one cubic foot of air

537 grains, or nearly one ounce and a quarter. Atmospheric air weighs nearly 14½ times heavier than hydrogen gas, and water weighs 854 times heavier than air. The last named can be compressed into $\frac{1}{800}$th of its original bulk, and may be expanded many thousand-fold; and thus differs altogether from water.

2. *Gelatine* and *Gluten*, 15 lbs. 1st.—An animal substance, or organic tissue, soluble in hot water, and congeals into a tremulous jelly. It exists almosts pure in the skins of some fish, and from the boiling of these is formed isinglass; and from the boiling of animal hoofs, &c., is formed glue. 2nd.—The viscid, tenacious substance found in grain, which gives adhesiveness to dough; also the cohesive element in blood.

3. *Fat*, 12 lbs.: An oily concrete substance, deposited in various parts of animal bodies.

4. *Phosphate of Lime*, 5 lbs. 13 oz.: A salt of phosphoric acid and lime, to make bone.

5. *Fibrine* 4¼ lbs.: A versatile, or protean compound of animals and plants, of the same nature as albumen, and forming an important element in nutrition. Fibrine may be regarded as the chief constituent of the softer solids in animal bodies; being found largely in chyle, blood, and muscular flesh.

6. *Albumen*, 4 lbs. 3 oz.; A nourishing matter stored up between the embyro and integuments of the seed in many plants; also a thick, viscous substance which forms a constituent part of both animal fluids and solids, and which exists nearly pure in the white of an egg.

7. *Carbonote of Lime*, 1 lb.: A salt formed by the union of carbonic acid and lime to make bone.

8. *Chloride of Sodium*, 3 oz. 374 grs.: Common table salt.

9. *Floride of Calcium*, 3 oz.: Also called fluor, or Derbyshire spa.

10. *Sulphate of Soda*, better known as *Glauber's Salts*, 1 oz. 170 grs.: A cathartic.

11. *Carbonate of Soda*, 1 oz. 72 grs.: A washing soda; an alkali.

12. *Phosphate of Soda*, 400 grs.

13. *Sulphate of Potash*, 400 grs.

14. *Per-oxide of Iron*, 150 grs.

15. *Phosphate of Potash*, 100 grs.

16. *Phosphate of Magnesia*, 75 grs.

17. *Chloride of Potash*, 10 grs.

18. *Silica*, 3 grs.: From flint, to make enamel for the teeth.

Total 154 pounds.

Having now before us the materials for building up the "House we live in," some people may be curious and ask, "Who can be found to put them together?" and again, "Who can supply this 'house' with a tenant when completed?" Questions easier asked than answered. However, it will be acknowledged that, with all the philosophy which man is in possession of, it is a work far beyond his finite powers. Such being the situation, can we employ our time more advantageously than by a few moments contemplation of the words in St. John's Gospel, chapter 1, and the first four verses; also, the 7th verse of the 2nd chapter of Genesis

We will now briefly enumerate a few of the organs and functions which are carried on in this "house" First, we have the skeleton, or frame-work; this is composed of 245 bones; on them are 527 muscles; these have the power of expansion and contraction. The length of the intestines is 35 feet. The amount of blood in the "house" is about 22 lbs. (or about one-seventh of the entire weight of man). It is estimated that of this quantity, about one-fourth is in the arterial, and the remaining three-fourths in the venous system. The blood contains 78½ per cent. of water.

The HEART is six inches in length, four in diameter, and pulsates 70 times a minute, 4,200 times an hour, 100,800 times a day, 36,772,200 times in a year, and 2,665,440,000 in three score years and ten. At each pulsation two ounces of blood are thrown out, 140 ounces in a minute, 525 pounds in an hour, and

12,600 pounds in a day. All the blood in the "house" passes through the heart in about three minutes, and with such force that, if a syphon gauge were inserted into an artery, a column of blood would rise in the tube to the height of 7½-feet, as a force equal to 14-lbs. of pressure is required for every contraction

The LUNGS contain about twelve pints of air, when at their usual degree of inflation. We breathe on an average 1,200 times an hour, and inhale 150 gallons of air during the same period, or 3,000 gallons a day; thus, in round numbers, their flows to the lungs every minute twenty pints of air, and about eight pints of blood, while, in the space of 24 hours, upwards of 57 hogsheads of air, and 24 hogsheads of blood, pass through the human lungs. The aggregate surface of the air-cells exceeds 20,000 superficial inches, and the lungs occupy 222 cubic inches of space.

The SKIN is composed of three layers, and varies in thickness. Its average area in man is estimated to be 2,000 superficial inches. The atmospheric pressure being about 14-lbs. to the square inch, therefore, a person of medium size is subject to a pressure of 28,000-lbs. Every superficial inch of skin contains 3,500 sweating tubes, or perspiratory pores, each of which may be likened to a little drain-tube one-fourth of an inch long, making an aggregate length, taking the entire surface of the body, of 201,166 feet, or a tile ditch for draining the "house" fully equal to 30 miles in length, from which is discharged from two to three pounds of water and waste matter daily.

The BRAIN, on which the immortal soul sits enthroned, with its Five Special Senses (see Nos. 632 to 650); and also the Nerves, together with their branches and remote ramifications, probably exceed *Ten Millions* in number, forming a body guard outnumbering by far the greatest army ever marshalled, every one of which is ever on the alert to obey the behest of the immortal tenant of the "House we live in."

34. CASE 3.—In this case have been arranged about 48 Articles of Human Food, and a statement in a tabular form will be found further on of the analysis of each article.

From the earliest down of existence to the last moment of life our bodies are constantly changing. Old particles of matter, when they are worn out, leave their places and are thrown out of the system. Were this the whole of the matter, our bodies would soon waste away, and that would be the end of us. But as fast as the old materials are thrown away new ones take their places, and it is solely out of our food that these new materials are formed. The food, then which man requires for his support and development is of two kinds—the inorganic and the organic. The first of these embraces certain mineral substances, as common salt, sulphur, phosphorus, iron, lime, sodas, potasses, silicon, and magnesias, either in combination or separate. These are not generally reckoned as ailments, and yet no human being can live without them. In their absence the body decays, disintegrates, and perishes. Common salt is composed of muriatic acid and soda. The first is an important ingredient in the gastric juice, and the latter promotes the secretion of bile. Sulphur is found in several of the tissues, particularly in the muscles. Phosphorus, united to fatty matter, is highly honoured in forming a portion of the brain and nerves, and is also combined with oxygen and lime to make the earthy or hard part of bones. These articles are not necessary to be introduced into the system in a separate state. They are contained in larger or smaller proportions in most articles of food; and man always suffers, as all animals do, from their absence. Common salt is found in the flesh of animals, in milk, and in eggs. It is not very abundant in plants, and we all know how eargely domestic animals devour it when it is given to them, and how constantly wild cattle resort to the Salt Springs, which, in the great West of the United States of America, are called "Buffalo-licks." Lime exists in nearly all animal and vegetable substances. In wheat-flour we get it in combination with phosphoric acid, that is, as phosphate of lime. Lime exists, too, in a state of carbonate and sulphate, in all hard water. Iron is found in the yoke of eggs, in milk, in animal flesh, in potatoes, peas, cabbages, and other articles. Sulphur, in flesh, eggs, and milk. Phosphorus is derived from eggs and milk; also from flesh, bread, fruit, and husks of grain.

ORGANIC FOOD.—The organic elements of man's food (which in bulk embraces nearly the whole of them) remain to be considered In the animal economy they serve two great purposes. A portion of the articles which compose them is *blood forming*, out of which all the tissues are made. The other part produces fat, which serves to warm the body by being burned with oxygen. These articles are derived partly from the vegetable and partly from the animal kingdom.

The proportions of articles composing the Non-azotized Columns in the Table of Food Articles are analogous in composition, all containing oxygen, hydrogen, and carbon. They are what Liebig calls supporters of respiration; the meaning of which is, in more comprehensible terms, that they are *supporters of combustion.* They are the *fuel which warms us.* They keep the fires going from which arise all the heat we have in our bodies. But they are destitute of nitrogen, and, on this account, are not blood-formers, and cannot be worked into flesh. Hence man cannot live on them.

The proportions of food articles found composing the Azotized Column in the Table also contain oxygen, hydrogen, and carbon, and to these they add nitrogen. This fourth component part, which forms only a small portion, gives them, for some reason never explained, the peculiar quality of producing blood and flesh. They are the raw materials out of which our bodies are constructed from day to day. Feed a man ever so largely upon sugar, starch, gum and oils, he will starve as certainly as if he were allowed nothing but water.

NAMES OF TWO GREAT DIVISIONS OF FOOD.—The possession or non-possession of nitrogen, then, is what distinguishes from each other the two great classes of food articles. Those which contain nitrogen have been called nitrogenized; and those which are destitute of it, non-nitrogenized compounds. As nitrogen is often called azote, the former class is more frequently named ozotized; the latter non-azotized. Let the reader now fix in his mind that the azotized articles of food produce blood and flesh, the non-azotized heat, and he will have the key to understand much of what has to be said in the Table of Food Articles, and likewise to unlock many of the mysteries of diet.

TABLE of the relative value of Articles of Food, arranged according to their proportions of nutrient matter in each of the four groups of elements concerned in vital change.

In 100 parts of	Water *	Azotized Curd Caseine Gluten, Fibrine, and Albumen †	Non-Azotized Oils and Fat	Non-Azotized Starch, Gum, Sugar.	Salts, Limes. ‡	Husks Woody Fibre.	TOTAL.
1. Milk, Human ...	88½	3¾	2¾	4¼	¾	...	100
2. Do. Cows' ...	87	4¼	3	4¾	¾	...	,,
3. Eggs	74	14	10½	...	1½	...	,,
4. Cheese, Skim-milk dried ...	...	80	11	...	9	...	,,
5. Cheddar do.	...	45	48	..	7	...	,,
6. Grain, Wheat ...	15	10	2	55	3	15	,,
8. Barley	15	12	2	54	3	14	,,
9. Rye, *b.*	13	10	1	60	4	12	,,
10. Oats	14	14	6	52	4	10	,,
11. Do. Meal ...	14	18	6	62	...	...	,,
12. Buck Wheat, *b.* ...	15	8	1	48	4	25	,,
13. Rice	13	7	½	75	¼	4	,,
14. Beans	14	24	3	43	3	10	,,
15. Peas	14	24	2	50	2	8	,,
16. Potatoes	75	2	1/33	17	¾	5	,,
17. Turnips	88	1	1/27	8	1	2	,,
18. Carrots	85	1	1/27	10	1	3	,,
19. Beet, Sugar ...	85	...	...	13	...	2	,,
20. Parsnips	80	2	...	16	...	2	,,
21. Onions, dried ...	...	30	...	70	...	...	,,
22. Cabbage leaves, do.	...	35	...	65	...	...	,,
23. Mushroom, do.		56	...	42	...	2	,,
24. Cauliflower, do. ...	..	64	...	36	...	...	,,

TABLE of the relative value of Articles of Food, arranged according to their proportions of nutrient matter in each of the four groups of elements concerned in vital change.

100 parts of	Water*	Azotized Curd, Caseine Gluten, Fibrine, and Albumen †	Non-Azotized Oils and Fat.	Non-Azotized Starch, Gum, Sugar.	Salts, Limes. ‡	Husks Woody Fibre	Total
25. Wheaten Flour ...	16	10	2	72	...	...	100
26. Do. Bread ...	45	6	...	49	...	...	,,
27. Do. Bran ...	13	18	6	...	7	56	,,
28. Indian Corn, *b.* ...	14	12	8	58½	1½	6	,,
29. Do. Meal ...	14	12	8	66	...	...	,,
30. Rye do. ...	14	9	3	72	2	...	,,
ANIMAL FOOD.							
31. Beef, well.fed ...	78	19	3	...	...	...	,,
32. Do. dried ...	...	89	7	...	4	...	,,
33. Do. lean do. Steak, Animals, Wild Fowls, Capons, Ortolans, Goose, Mutton, Veal, Venison, and Pork ...							,,
FISH DRIED.							
44. Skate	...	97	3	...	...	...	,,
45. Haddock	...	92	8	...	...	...	,,
46. Herring	...	92	8	...	...	...	,,
47. Salmon	...	78	22	...	...	...	,,
48. Eel	...	44	56	...	...	...	,,

The Analysis comprising the above Table of Articles of Food are taken from the works of Professor Johnston's *Chemistry of Common Life*, Dr. Warren's *Household Physician*, and Dr. Nichol's *Human Physiology*.

* Water. The food if not naturally liquid should be intimately mixed with a large quantity of liquid before it is introduced into the stomach.

† The nutritive value of different sorts of food, by the late Baron Liebig.

			D.
1 lb. of Caseine in Cheese costs	...	...	20
1 ,, Curd in Milk	,,	...	35
1 ,, Fibrine in Meat	,,	...	42
1 ,, Albumen in Eggs	,,	...	113

1 and 2. MILK is supplied by nature to be our first food, and is a good type of all alimentary substances. It contains curd, which has nitrogen, is equivalent to albumen and fibrine, and represents the *blood-formers*. It has also butter and sugar; these represent *heat-formers*. It has salts, which contain potash, soda, phosphorus, &c. Human milk very closely represents the milk of the cow. The milk of women from 15 to 20 years of age contains more solid constituents than that of women from 30 to 40 years of age. Women with dark hair also give a richer milk than those with light hair.

3. EGGS, as a whole, are richer in fat than fat beef. They are equalled in this respect amongst common kinds of food only by pork and eels. The white of the egg is entirely free from fat, and that albumen is a very constipating kind of food.

4 and 5. CHEESE consists almost wholly of flesh-forming elements and fat; but different qualities of cheese have these in very different proportions, as may be seen in the table of proportions.

6. WHEAT is the king of all grain, and the four groups are represented in excellent proportions. When not deprived of the bran, it is perhaps the very best supporter of animal life. So high have been the regards of men for it, and so generously have they awarded to it their acknowledgements, that its

In Vegetables—				D.
1 lb of Gluten in Wheat costs	...	...		7½
1 „ „ Peas „	...	...		5
1 „ „ Potatoes „	...	...		35

‡ The idea of a perfect sort of food must be associated with three conditions. It must contain a certain quantity of albuminates, and there must also be a certain proportion of heat-giving substances, and of nutritive salts (see columns 5 and 6), add to the foregoing, pure air and water.

Samples of Indian Corn, Buck-wheat, and Rye, from Nebraska (U. S.), grown on the lands of the Burlington and Missouri River Railroad Company. Persons interested in the growth of Cereals should visit the Company's Office. No. 16, South Castle Street, Liverpool, where a great variety of the samples of the product of that State are on view.

product, bread, has been everywhere called "The Staff of Life." When the grain of wheat is crushed between the stones of the mill, and is then sifted, it is separated into two parts—the bran and the flour. The bran is the outside, harder part of the grain, which does not crush so readily, and when it is crushed darkens the colour of the flour. It is therefore generally sifted out by the miller, and used for feeding horses, pigs, and other animals, or even applied to the land as manure. If the flour be mixed with a quantity of water sufficient to moisten it thoroughly, the particles cohere, and form a smooth, elastic and tenacious dough, which admits of being drawn out to some extent, and of being moulded into a variety of forms. If this dough be placed in a sieve, or on a piece of muslin, and worked with the hand under a stream of water so long as the water passes through milky, there will remain at last in the sieve a white sticky substance, very much resembling bird-lime; this is the substance which gives its tenacity to the dough. From its glutinous character it has obtained among chemists the name of gluten. When the milky water has become clear by standing, a white powder will be found at the bottom of the vessel, which is common wheaten starch. Thus the flour of wheat contains two principal substances, *Gluten* and *Starch*. Of the former, every 100 lbs. of fine English flour contain about 10 lbs., and of the latter, 70 or 72 lbs.

8 and 9. BARLEY and RYE very much resemble the grain of wheat in composition and nutritive quality, but their flavour is not liked in this country.

10. OATS are a favourite food in this island.

11. The MEAL of this grain is distinguished for its richness in gluten, and for containing more fatty matter than any other of our cereal grain.

12. BUCK-WHEAT is very poor in nutritive matter, fat, starch, and sugar; but well supplied with salts.

13. RICE is much like the last, except that it has less salts.

14. BEANS are the richest in nutritive matter of all vegetable

substances, except cabbage and oats. They have more albumen than wheat, corn, barley, or oats; but in fat and starch they are lower in the scale.

15. Peas similar to beans.

16. POTATOES:—Three quarters of this esculent are water, and the root is poor in all elements of nutrition. The meal when dried is less nutritious, weight for weight, in the sense of supporting the strength, and enabling a man to undergo fatigue, than any other extensively used vegetable food, with the exception only of rice and plantain.

17. TURNIPS; 18, CARROTS; 19, BEETS; 20, PARSNIPS; these are much alike—being all poor in nutritive qualities.

21. The ONION is a very extensive article of consumption in this country; and in Spain and Portugal it forms one of the common and universal supports of life. It is interesting, therefore, to know that, in addition to the peculiar flavour which first recommends it, the onion is remarkably nutritious. The dried onion root contains from 25 to 30 per cent. of gluten, and ranks in this respect with the nutricious pea and grain of the East.

22, 23 and 24. The CABBAGE: The dried leaves contain from 30 to 35 per cent. of gluten, and are, in this respect therefore, more nutritious than any other vegetable food which is consumed to a large extent. There are only two exceptions— the mushroom, which, in its dry matter, contains sometimes as much as 56 per cent. of gluten; and the dried cauliflower, in which the gluten occasionally rises as high as 64 per cent. The cabbage, however, when eaten frequently and in large quantities, has, in common with nearly all kinds of food which are rich in gluten, a costive or binding tendency upon the human constitution; hence the propriety of eating this vegetable with fat or oily food. Bacon and greens, like pork and pease-pudding, are a conjunction of viands which do not owe their popularity either to old habit or to the mere taste of epicure, but are in reality an admixture which constitutional experience has prescribed as better fitted to the comfort of the alimentary canal of every healthy individual than either kind of food eaten alone.

25. WHEATEN FLOUR contains water naturally, but it absorbs much more during the process of conversion into bread. 100 lbs. of fine wheaten flour takes up 50 lbs. or half its weight in water, and gives 150 lbs. of bread. Thus, 100 of English flour and 150 of bread contain respectively: dry flour 84, natural water 16—total 100; ditto 84, ditto 16, added 50, bread 150.

26. Our DRY BREAD, then, contains 45 per cent. of water, and is in fact both meat and drink together. Fine, well-dressed wheaten bread, well-baked, contains: water, 45; gluten, 6; starch, sugar, 49—total, 100.

27. BRAN, or HUSK OF WHEAT, which is separated from the fine flour in the mill, and is often condemned to humble uses, is more nutritious than either the grain as a whole, or the whiter part of the flour; it is richer in gluten by 18 to 6 (blood and muscle producing); and also richer in fat as 6 to 2 (heat producing). Bran is more than a fourth of the grain of wheat, and this article of food is given to cattle, and oftener converted into manure. With this fact before us it may be seen what a fearful waste of man's best food there is in this country.

28 and 29. INDIAN CORN abounds in fat and starch, has an amount of albumen, though not so much as oats, barley or wheat, and in salts is rather deficient. It is strictly an American plant.

30 Rye is also a grain of considerable nutritive value, and much cheaper than wheat.

31 to 34. BEEF and BREAD are the staple articles of English life; and as the study of wheaten bread in the preceding remarks gives us the key to the composition and nutritive qualities of other vegetable substances, so an examination of beef will help us to a clear knowledge of other kinds of animal food:—

1st. *Flesh.* If a piece of fresh beef be dried in the hot sunshine, or in a basin over boiling water, it will shrink, dry up, diminish in bulk, and lose so much water that 4 lbs. of fresh, newly-cut beef will leave only 1 lb. of dried flesh. Again, if we take a piece of lean beef, and wash it in separate portions of clean water, its colour will gradually disappear. The blood it

ntains will be washed out, and a white mass of fibrous tissue will remain. If this be put into a bottle with alcohol or ether, a variable proportion of fat will be dissolved out of it, and the whole fibrous mass will now be drier and more compact than before. Through this fibrous mass many minute vessels are scattered, but it chiefly consists of a substance to which chemists, from its fibrous appearance, give the name of *fibrine*. Of this fibrine the lean part of the muscels of all animals chiefly consist; and is, therefore, the principal constituent of animal flesh. It resembles the gluten of plants very closely in composition and properties, insomuch that, in a general comparison of animal with vegetable food, they are considered as absolutely identical. Lean beef, therefore, agrees with wheaten flour and bread, in containing water and fat, only in beef the water is as great as it is in the potato or the plantain. It agrees with them also in containing a substance (fibrine) which represents in the animal the gluten of the plant. The main differences between beef and bread are—first, that the flesh does not contain a particle of starch, which is so large an ingredient in plants; and, second, the proportion of fibrine in ordinary flesh is about three times as great as in ordinary wheaten bread; or a pound of beef-steak is as nutritive as three pounds of wheaten bread, in so far as the nutritive value of food depends on this one ingredient.

35. The FLESH OF WILD ANIMALS is represented very nearly by the lean beef, of which the composition is given above.

36 to 43. FOWLS contain less fat than butcher's meat, though when crammed and fed upon food rich in fat, the capon, the ortolan, and the diseased liver of the goose, become as rich as the fattest beef or mutton.

The Composition of other kinds of flesh which we consume as food is much the same as that of beef. Veal and venison contain less fat, while pork contains more.

The fat of animals to a certain extent represents and replaces the starch of vegetable food.

44 to 80. FISH, in general, are less rich in fat than the flesh meat in our markets, and consequently contain more fibrine

The figures in the Table, of course, are liable to variation—the herring, especially, being very much fatter at some seasons and on some coasts than others. We see that salmon is justly considered a rich fish, since it contains nearly three times as much fat as the haddock. The epicure has also a substantial reason for its attachment to the eel, since it contains a considerably greater weight of fat than of muscular fibre.

It appears, therefore :—

First,—That the dried flesh of all animals which we most usually consume for food consists essentially of fibrine.

Second,—That the proportion of fat is variable, and that those varieties of animal food are most esteemed for human sustenance in which a considerable proportion of fat is present. Hence—

Third,—Where the proportion of fat is naturally small, we endeavour to increase it by art, as in feeding the capon; or we eat along with those varieties in which fat is limited some other food richer in fat. Thus we eat bacon with veal, with liver, and with fowl; or we capon the latter, and thus increase its natural fat. We use melted butter with our white fish, or we fry them with fat; while the herring, the salmon, and the eel are usually dressed and eaten in their own oil. If the reader will take the trouble of consulting any popular cookery-book he will find that sausage, and other rich mixed meats are made in general with one part of fat and two of lean—the proportion in which they exist in a piece of good marbled beef—art thus unconsciously again imitating nature.

The Quantity of Food, Water, and Air a Man will require and can consume daily.

In conclusion, I have only now to add the quantities of elementary and material articles which a healthy adult man, of average

weight and size, taking moderate exercise, will require and can consume daily, namely, from 32 to 40 ozs. of dry, nutritious food, which should have the following characters :—

1. About $\frac{1}{200}$th must be mineral matter.

2. From $\frac{2}{5}$ths to $\frac{1}{2}$ may be water, leaving $\frac{3}{5}$ths or not less than $\frac{1}{2}$, or from 15 to 20 ozs. of dry, solid alimentary material.

3. Three or four ounces of gluten and fibrine must be combined with three or four times that quantity of heat-giving material.

4. The heat-giving constituents must contain a mixture of fats (hydro-carbons) with saccharine materials, in the proportion of about one of the former to three of the latter.

5. The articles of food must be sufficiently varied to meet the requirements of the taste and of the appetite, and their mechanical and other conditions must be suited to the digestive powers of the somach.

In addition to these characters, every complete diet must contain some potash-vegetable or fruit; and the total amount of water taken in 24 hours, *including that contained in the dry food* (see above No. 2), must not be less than 70 ozs. avoirdupois. Add to the foregoing 3,501 gallons of atmospheric air, and the list is complete.

81.—A miniature model of a Man, the skin having been removed, shows all the superficial muscles and tendons of the body.

82.—A well-formed female pelvis, showing its capacity for parturition.

83.—Another well-formed female pelvis.

84 to 87.—Four skulls of newly-born children.

88.—A mal-formed female pelvis. The cause which frequently prevents a woman from bearing children, often originates in want of due care in infancy. The child, placed on its legs while the bones are mere cartilage, must suffer the contraction of the pelvis. Hence difficult cases arise, and craniotomy has to be resorted to.—See No. 122.

89.—Skull of a man, showing the phrenological divisions.

90 and 91.—Two sections of the human skull.

92 and 93.—Two sections of the human skull.

EMBRYOLOGY AND FŒTAL DEVELOPMENT.

Parents frequently live over again in their children, for they certainly resemble them, not merely in countenance and bodily conformation, but in the general features of their minds, and in their virtues and vices. At the moment of impregnation both parties must, to some extent, transmit their qualities to their offspring; but either may transmit the lesser or the greater degree of their constitutional peculiarities, thus occasioning the greater or less resemblance to one or other parent. Nevertheless while the child is in the mother's womb it is liable to be affected favourably or injuriously by all the causes which affect her in one way or the other. If she is disordered or defective in her vital functions, namely:—in indigestion or respiration, circulation, excretion, &c., its vital functions must suffer; or gross food may render it scrofulous; and sedentary habits may cause its muscles to be weak and flabby. If she does not respire sufficiently, it will be puny, and bloodless; if she is drugged, it will he of bad .habit; if she is mercurialized, or antimonialized, it will have a predisposition to tuberculosis and consumption; if she is dosed with quinine, it will be defective in the external senses, especially hearing and seeing; if she takes the prepara-

tion of iron freely, its whole nervous system will be shattered. So, too, with the mental influences:—a fit of passion; a frightful narrative; a terrible sight; an unhappy home; an unkind husband, &c., are each and all causes of abnormal conditions on the part of the mother, and consequent deterioration on the part of the child. From the moment of conception, until birth, the influences of the mother are constant. The rule, then, for the production of good and healthy children is exceedingly simple—is to keep the mother happy and comfortable. For the female sexual organs laid open, See No. 114 and 940.

94.—Impregnated ovum largely magnified. A small white stripe is found on the germinal spot, and this shape is termed nota primitive.

95.—Impregnated ovum, largely magnified ten days after pregnancy. Showing how the vessels of the allantoid membrane extend themselves through the chorion, thus effecting the union between the mother and the child.

96.—The uterus laid open with its appendages broad and round ligatures; fallopian tubes, and ovaria. On one of the ovaria a spermatoza has impregnated an ovum. The uterus or womb is situated in the pelvis, between the bladder and the rectum. It is here that the child is developed during pregnancy. Previous to impregnation it is in the shape of a pear. It is about 3 inches long, 2 broad, and 1½ inches in thickness, and is retained in its place by several ligaments. By turning to the Venus de Medicis, No. 603, the female generative and urinary organs may be seen in their relative positions. In a fold of the broad ligaments the ovarium is situated, one on each side, and connected with them are the fallopian tubes; through one of these the ovum passes after impregnation; and, if it should happen that it is detained here, extra uterine pregnancy is produced, and the child has to be removed by what is called the Cæsarian operation —See No. 591, and model of Thos. Lane No. 590. The ovum from which the child is developed, is said to reach the womb in ten days after conception, and during that short period the inner surface becomes covered by a fine skin or membrane, so that when the child reaches that part, it forms a connection with the membrane, and is supposed to derive its nourishment

from it during the first stage of fœtal life. As pregnancy advances, the womb enlarges, and its walls thicken; a most necessary provision for the activity and energy required for the expulsion of the child when it has become fully developed.

97.—The uterus laid open, and in it is an embryo twenty days after impregnation.

98.—Testicles of a man, one of which is laid open; therein may be seen the spermatic cord, arteries, veins, and nerves, also the ducts which convey the sperm from the testicles to the prostrate gland.

99 and 100.—The external appearance of two breasts; one that of a virgin; the other that of a mother. Also see Nos. 310, 128.

101.—The front of the uterus having been removed, an embryo twenty-eight days after impregnation is seen, with all the appendages of the womb and embryo. See Nos. 166 to 175.

102.—Do. do. two months after do.

103.—Do. do. three months after conception: the fœtus is now about $2\frac{1}{2}$ inches in length, and weighs about two ounces.

104.—Do. do. four months after conception: the fœtus is shown in its natural position, with its head downwards; the after-birth is seen attached to the womb, and the navel cord connecting it with the child It is along this umbilical cord that the pure blood is conveyed to the child, by means of the umbilical vein, and returned back again by the two umbilical arteries.

105.—Do. do. five months after conception, the uterus reaches half way to the navel.

106.—Do. do. at six months, it reaches to the navel.

107.—Represents the body of a full-sized woman. The skin, muscles, and ribs of the chest and abdomen, having been removed, the entire viscera may be seen. (1) Pectoral muscles. (2) Fatty part of mammary gland. (3) Ribs. (4) Pulmonary veins. (5) Pulmonary arteries. (6) Lungs. (7) Ditto. (8) Heart. (9) Diaphragm. (10) Pericardium. (11) Liver. (12) Stomach. (13) Duodenum. (14) Gall-bladder. (15) Transverse-colon. (16) Small Intestines. (17) Urinary-bladder. (18) Fatty parts of the peritoneum. (19) Pubes. They are all in their relative positions.

108.—Uterus, with a seven months fœtus therein. At this age it weighs about 2½-lbs. Children are born at seven months, and live.

109.—Uterus containing a fœtus eight months after impregnation, with after-birth, and umbilical cord.

110 and 111.—The child is out of the uterus, but not detached from the umbilical cord, the placenta is seen adhering to the side of the womb.

112.—A still-born child. The chest and abdomen are laid open to show the large size of the liver; that organ having to purify the blood of the child; the lungs remaining one mass until the first act of inspiration; this one act does away with fœtal life, and the child is born. If the lungs of the fœtus were put into water they would sink; if the lights or lungs of a child (although it has taken in only one inspiration) they would float. All the other organs of the chest and abdomen are portrayed.

113.—Model of a well-developed child just born. All its proportions are such as to cause the mother's heart to throb with thankfulness for so great a blessing. The enlargement of the womb, and the changes in its position, necessitate a change in the position of the intestines, which are gradually and gently pushed upwards, and backwards; but this necessary alteration is defeated by the *wearing of stays*, which push them downwards. In contending for space, the intestines are forced from their proper cavity, and the various forms of rupture ensue, or there is a displacement of the womb (see Nos 601 to 960). The reflecting mind will weigh well this suggestion.

At this period the womb is sufficiently large to hold two gallons of liquid, and at this time too much care cannot be expended on the mother. She ought not, under any circumstances, to leave her bed until nine or ten days have elapsed from her delivery, as it requires quite that time for the womb to be absorbed into the system, and to find its proper place. The prolapsus uteri is the fearful penalty often resulting from the want of this proper precaution. So much do I feel the necessity of being urgent with mothers on this important point, that I will take this opportunity of adding additional remarks on :—

THE DISPLACEMENT OF THE WOMB.—Two causes for this deplorable evil may be assigned : first, the odious practice of tight lacing ; secondly, the injurious practice of leaving bed soon after confinement. Before the womb has had time to subside to the natural and original size, and while as yet there is too much weight for the ligaments to support, the organ becomes displaced by the mother getting out of bed, perhaps to attend to her household affairs, or even to go to her employment! The amount of suffering she has afterwards to undergo is incredible, and often she has the sense of pain of dragging down during the remainder of life. Among the working classes these cases are far from being unfrequent.

The other cause I advert to again, and cannot too urgently dissuade even unmarried ladies from the use of tight stays. In my practice for twenty years, I have met with too many cases in which even unmarried ladies have forced down, by tight lacing, the abdominal viscera upon those of the pelvis, till the womb has protruded from the cavity. Marriages have been broken off, and hopelessness has come over the victim of this fearful practice! Let reason, let intelligence, let due regard be paid to nature, let comfort prevail—but never let women give way to foolish vanity.

OBSTETRIC PREPARATIONS.—Models illustrating the various positions of the child in the womb, and during birth, together with the different stages of delivery.

The models here introduced are intended for the female sex, to whom they have especial interest ; but there is not one of us who may not be benefitted by bringing to remembrance the words of Holy Writ conveyed to the frail mother of the human family—

"In sorrow thou shalt bring forth children." This sentence receives its daily accomplishment. Let hard-hearted men, guilty of cruel acts to the weaker sex, allow this lesson to soften their feelings into sympathy and kindness; and let those who strive to make the weak and gentle a prey to their lusts, think what misery their few hours of pleasure may bring over the too confiding and too devoted victims of their unhallowed, unlawful, and unmanly purposes.

It is gratifying to think that education, science, experience, and skill, have all been brought to bear upon the hour of woman's severe anguish, and have so far succeeded as greatly to mitigate her sufferings. Many a valuable life has thus been saved, and nature has been aided by appliances the most skilful and appropriate. "He is a benefactor who soothes an ill in a mother's life; he is a patriot who looks to the relief of the mothers of the land."

114.—A model of the female organs of generation laid open, shewing the sexual parts as follow:—(A) Mons veneris. (B) External labium. (D) Mucous coat of the vagina. (E) Perineum. (F) Rectum. (I) Anus. (E) Nymphæ. (G) Glans clitoris. (K) Urinary canal. (V) Spongy structure of vagina. (K) Broad ligaments. (K*) Fallopian tubes. (L) Fringed end of ditto. (S) Ovarian aperture of ditto. (T) Ditto laid open. (U) The Uterus. (1) Mouth of the womb. (2) Transverse lines of vagina. Also see No. 940 and No. 941.

115.—A section of the pelvis. The womb is open to shew the natural position of the child within the cavity

116.—Ditto, represents a case of natural labour, in which the head of the child has made its exit first.

117.—Ditto, with twins as they lie in the womb previous to labour pains; the coat amnii and umbilical cords with the placenta are well represented.

118.—An ear presentation, in which the face has been pushed forward into the hollow of the sacrum, and the ear presents itself first for egress.

119.—A hand and foot presentation. An examination of the parts will explain this model.

120.—FORCEPS DELIVERY.—In many accouchments the instrument called forceps is used to disengage the head of the child This operation, however, is not so dangerous as would appear by this model.

121.—The forceps.

122.—This model represents a case in which craniotomy has to be performed by the use of Smellie's scissors — a steel instrument, which has to be forced into the cranium of the child, whether alive or dead. By this process serious and often fatal consequences are prevented to the mother.

123.—Smellie's scissors.

124.—Hands of the accoucher.

125.—This model represents both placent-a-prævia and a tumour in the mouth of the womb. It prevents the head of the child from making egress from the womb into the vagina, and thus obstructs delivery.

126.—Represents the adhesion of the placenta to the side of the womb ; which the hand of the accoucher is introduced to remove.

127.—In one case, will be found models of a section of a female's chest, the skin, muscles, fatty matter, and ribs laid bare.

128.—The breast (mammary gland), is situated on the top of the pectoral muscles, which is laid open to show the milk cells and the arteries. The breasts consist of common integument and fat, with glands and blood-vessels for the purpose of secreting milk, and discharging it for the first nourishment of the child. Like all other parts, the breasts may inflame from external violence, or from internal and unknown causes; but one of the most frequent causes of inflammation is, the strong rush of blood to the parts shortly after child-birth. Previous to the birth, a great quantity of blood is required, and is supplied to the womb to supply materials for the growth and nourishment of the child, but when it is born, and acquires food from another source, then the blood ceases to flow to the womb, hence the great supply to the breasts at that particular time. See No. 310.

129.—The skin of the breast with the nipple. During the last month of pregnancy, particular attention should be paid to the nipples. Untold misery often results to the young mother from sore nipples, and it is well worth her while to use every precaution against them. The nipples. are of course, in an excitable state during the whole period of gestation, and at length frequently become irritable and tender. Let them be bathed daily for three or four weeks before confinement with some astringent and cooling lotion, as oak bark, decoction of borax-water, alum-water, or a solution of tannin.

130.—The breast laid open, and the fatty part of the cells are seen.

131.—Ditto, with blood vessels.

132.—A fœtus in the uterus, three months after impregnation.

133.—Ditto, showing twins in the womb.

134.—Ditto, showing three in the womb.

135.—Ditto, ditto four ditto.

136.—A model of the mammary glands.

137.—Ditto laid open, shewing the milk cells, and the surrounding tissues.

138.—The urinary bladder of a female.

139.—A Hungarian nobleman, from whose forehead a horn protruded, and he, in consequence, grew bald-headed.

140.—The daughter of the above who had a horn on her cheek and also on her forehead.

141.—The head and face of William Palmer, executed for the murder of his companion Cook.

SURGICAL OPERATIONS.

Among the painful disorders to which the human race are subjected, there are few more excruciating, than those to which the urinary organs are liable.

142 to 146.—This model represents a man undergoing the operation of extracting the stone from the bladder. (A) The instrument employed is the catheter, and in this figure it is seen introduced through the urethra into the bladder (B) by one operator (C), while the other is in the act of cutting through the perineum. The calculus or stone which was extracted from the patient is preserved, and lies in the case with the steel forceps.

147.—Shewing the stone in the kidney.

148.—Ditto in the ureter (a conducting tube from the kidney to the bladder.)

149.—Showing the stone in the bladder.

150.—Ditto the stone in the urethra or tube through which the urine passes outward.

151.—Backbones and ligatures of a shark.

152.—The head of a New Zealand chief. He was killed in one of the wars with England; the opening made by the ball, which is supposed to have been the cause of death, may be seen on the back of the head. The skin of his face has been very elaborately tattooed.

154.—Circumcision, as performed among the Jews. This highly interesting operation, commanded by Divine Authority thousands of years ago, and still performed by the descendants of the people among whom it was first instituted, consists of two parts: the one, that of removing the skin of the *prepuce;* and the other, the turning back a small portion of the remaining inner skin. It is performed on the eight day, and is of much more importance than is generally imagined. Does he who scoffs at this operation know, that some of the diseases to which these parts are subject are by this operation entirely avoided? For example *Phymosis* and *Para-phymosis*—See Gen. chap. 17, v. 10, "This is my covenant which ye shall keep, between me and you every man child among you shall be circumcised." Levit. chap. 12, v. 3, "And in the eight day the flesh of his fore-skin shall be circumcised." Luke, chap. 2, v. 21, "And when eight days were accomplished for the circumcision of the child, his name was called Jesus."

155.—Model of the parts of the same child after the operation of circumcision.

156.—Model of the part of the child after complete recovery.

BEFORE AND AFTER VACINATION.

"HE MAKES NO FRIENDS WHO NEVER MADE A FOE."

157.—Model of a fine healthy boy free from all disease. "And God saw everything that he had made, and behold it was very good."

158.—Model, representing the same child after vaccination. The boy was in excellent health until it was innoculated with the virus of small-pox, and within six months it was one mass of corruption, when death put an end to its miseries.

"WHATSOEVER A MAN SOWETH THAT SHALL HE ALSO REAP."

159 and 160.—Models, life-size, of two children who were born of syphilitic parents, with congenital chancres and sores over their whole bodies.

FREAKS OF NATURE.—EXTRA-UTERINE.

161.—A model of the womb, with the two fallopian tubes and ovaria. In one of the fallopian tubes is seen a fœtus eight weeks after impregnation. This production is termed extra-uterine, because the child is forming in an unnatural place, contrary to the laws of nature. Such fœtus never reach maturity, as the only place for them is the womb. The Cæsarian operation must be resorted to. See No. 591. See also the *Model of the Man in the Family-way*, No. 590.

162. Another model nearly similar. In this the fœtus is found developing on the ovaria.

163.—A wax model of the cerebrum and cerebellum of the brain, laid open, the light brown bulb seen in the centre is by some physiologists considered to be the seat of the soul—it being the centre of the nervous system.

164.—The great psoas and iliac muscles, on them are seen part of the spermatic blood-vessels nerves and ducts. The canal deferentia. This duct conveys the sperm of man from the testicles to the prostate gland; the great crural nerve may also be seen.

165.—The small psoas muscle.

166 to 175.—Nine sections of the womb, showing the various sizes from the first month after conception to the ninth month.

176.—The head of a mummy brought from one of the Royal Catacombs in the great Pyramid on the western banks of the river Nile, near the city of Memphis, in Egypt. It is supposed to be the head of a royal Ptolemæus, who reigned 1,700 years before the birth of Christ.

177.—The head of another mummy.

177A.—Skeleton of an English bat—compare the formation of this with Nos. 506 and 507 human skeletons. Any person of observation cannot fail to see the many points of resemblance between them.

178 to 190.—Two cases of human bones, explanations of which will be found on cards within.

The last of the Models on the North Side.

Physiological diagrams, prepared under the direction of John Marshall, F.R.C.S. Nine diagrams, life-size, each on canvas 7 feet by 3 feet 9 inches, coloured in fac-simile of original drawings.

191.—(1) The skeleton and ligaments.

192.—(2) The muscles, joints, and animal mechanics.

193.—(3) The viscera in position. The structure of the lungs.

194.—(4) The organs of circulation.

195.—(5) The lymphatics, or absorbents.

196.—(6) The digestive organs.

197.—(7) The brain and nerves, and the organ of voice.

198.—The organs of sense.

199.—Microscopic structure of the textures.

200 to 210.—Also nine large coloured diagrams on Botany, by the Rev. Professor Henslow.

211.—Hercules (one of the Gods), son of Jupiter and Alcemena.

212.—A miniature model of a man, the skin having been removed, shows all the superficial muscles.

MODELS SITUATED ON THE SOUTH SIDE FROM WEST TO EAST

213.—Model representing the left leg of a woman, all the superficial muscles are seen.

214.—A model shewing the whole of the contents of the thoracic and abdominal cavities of a woman, the walls being removed, the viscera are exposed on all sides. See also Nos. 107 and 600.

215.—Model of the right leg of a female, shewing all the superficial muscles.

216.—A section of the head, face, and neck of a man; (A) lower jaw bone, (B) jugular vein, (F) carotid artery, (D) first rib, (C) sub-clavian artery (Q R) sternothyrides, muscles, (S) ditto cartilage, with nerves spreading over all the parts.

217.—A Hermaphrodite photographed from life. Also see Nos. 966 and 970 wax models.

218.—MASTURBATION.—This model represents the abdominal muscles of a man. At (A) are seen the aponeurosis muscles, also the oblique ring or aperture near the pubes where the spermatic vessels come out of the abdomen, and descend with the cremaster muscle into the scrotum. Particular attention should be directed to these parts. The first symptoms of weakness through practising onanism are here seen and felt; the spermatic cords elongate, and the blood-vessels thicken, and swell out sometimes to an enormous size. See also Nos. 928, 269, 971, 1003.

219.—A similar model to the last. Diseases of the integument, the skin, and its appendages.

220 to 257.—Here are placed 37 models in eight glass cases, portraying secondary symptoms of syphillis, &c., of skin diseases, all taken from LIFE. Some of these diseases have been greatly aggravated by the use of MERCURY, and also, wrong treatment, namely:—ulceration, small-pox, warts, tumours, effects of inflammation, syphilitic ulceration, and diseases of the appendages of the eye, &c.

258.—Life size model of the head, neck, and breasts of a woman, aged 25 years, who became affected with syphilis, and ulcerations broke out over her whole body, communicated to her by suckling a child whose parents were labouring under that disease. This case occurred at Birkenhead, a few years ago.

259.—Model of the head of the child which was born of syphilitic parents, with congenital chancres on the lips and roof of its mouth. The same which communicated the disease as represented above. See Nos. 973 to 1003.

260.—Model of the head of a child suffering under a similar disease. In this model the visitor sees the awful effects of men leading a depraved life: "Visiting the iniquity of the fathers upon the children, and upon the children's children, unto the third and to the fourth generation."

261.—Face of an old bachelor; a confirmed onanist. He became idiotic, and rapidly sank into second childhood. [What a fearful account he will have to give of himself at the judgement day!]

262.—Face of a man shewing the evil effects of secondary symptoms of syphilis.

263.—Syphilis case. This model of the head represents the final and most severe form of secondary symptoms, with the palate lost, the bones of the nose nearly destroyed, and the whole system a perfect mass of corruption.

264.—Another model of the head and neck, shewing the awful and degraded state into which men come when they disobey the laws of God. "The wages of sin is death."

265.—Gonorrhœal opthalmia. In this disease of the eye-lids there has in numerous instances been observed a symptom, which at first forms in drops near the internal angle of the eye, terminates in a constant trickling over the cheeks. This continuous flow of tears over the eye-lids proves always troublesome, and in some cases painful by producing tenderness, and sometimes ulceration of the chest.

266.—Another case of gonorrhœal opthalmia. The external parts of the eyes remain sound, but the pupils are always greatly

dilated and incapable of any degree of contraction, even when exposed to the strongest light. This effection effects the eye-lashes, either in the form of a dry scurf, or of a gummy viscid matter, and glues the eyelids so firmly together as to render it difficult and very painful to the open eye.

267.—Appendages of the eye affected through the same cause.

268.—Syphilis case. This model of the human head represents secondary symptoms of confirmed disease, attended by deep-seated ulcers on the face, which spread rapidly over the whole system, and very often affect the bones.

269.—ONANISM, OR SELF POLLUTION.—See Gen. xxxviii. v. 9) The victim of this baneful habit was a young man whose blood became so impoverished as to produce emaciation and general decay. He died at the age of twenty-six from its effects.

276.—Models of the arm and hand, which form together a piece of the most unique but complicated mechanism ; each portion is a study of itself. By means of them, man exercises a power with which no other creature is gifted. The hand outstretched can reach any part of the body, and its intimate connection with the other parts of the body is such that there is no limit to its usefulness, or to the variety of purposes which it may effect. See the muscles of the hand and arm further on.

277.—Left hand and arm, with nerves and blood vessels.

278.—This model illustrates the sense of smell by a transverse section of an artificial nose. The membranous lining and olfactory nerves are portrayed ; as well as the cerebum and cerebellum.

279.—Right lobes of the lungs. Tubercle or phthisis-pulmonalis. See No. 308.

PHTHISIS, OR Consumption.—At the head of the diseases of our climate stands consumption. It may be divided into two kinds, the tubercular and the bronchial : the former has a constitutional, the latter has a local origin. The following are a

few of the symptoms, namely: dulness of sound on and under the collar bones; inspiration shortened; expiration augmented, both in duration and intensity; occasionally a pulmonary crumpling sound—like dry crackling ratles; the resounding of the voice at the top of the lungs, &c.

280.—A section of the heart, with the large blood-vessels. Trachea (wind-pipe). Œsophagus (gullet), &c. In this model the visitor may see the complex structure of the heart and its appendages.

281.—A section of the heart, shewing the right auricle and ventricle, and the ossification of the tricuspid valve.

282.—Another section of the heart, shewing the left auricle and ventricle—the mitral valve is also represented as ossified.

283 —The aorta with the three semi-lunar valves.

284.—Another model of the heart laid open. Life rests upon a tripod, namely, the brain, the lungs, and the heart; the last named is enclosed in a case or sac called the pericardium. The heart is double, it has four cavities, two for receiving the blood —auricles—and two for expelling it—ventricles. The heart is subject to a number of diseases, such as:—1. Tumers. 2. Softening. 3. Induration. 4. Fatty degeneration. 5. Bony and cartilaginous. 6. Shrinking. 7 and 8. Acute and chronic inflammation. 10 and 11. Semilunar and mitral ossification of the valves. 11. Palpitation. 12. Neuralgia. 13. Displacement, &c.

285.—Pericardium or fatty sac of the heart.

286.—The LIVER. Its functions are to take the superabundant carbon out of the blood; the carbon unites with other elements and forms bile—the peculiar bitter substance which is poured into the upper bowels and which greatly aids digestion. The liver is liable to become inflamed from several causes, such as gravel (see No. 295), external violence, suppressed secretion, hot climates, inflammation of the duodenum, and the immoderate habit of gin drinking.

287.—The gall bladder and duct.

288.—Diseases of the kidneys. "Bright's disease."

289.—A back view of the intestines of a man, the mesenteric arteries, and veins, together with the lacteal vessels, are most elaborately portrayed.

290.—A front view of the intestines, showing the numerous convalusions, and the way in which the chyme passes. The intestines are divided into two parts—small and large—the small have a length about 25 feet, the large about 15 feet.

291.—The transverse colon.

292.—A front view of the stomach, pancreatic gland, and spleen. See No. 107.

293.—A back view of the stomach, duodenum, duct of the gall bladder, and pancreas.

The STOMACH is a large membranous bag, into which the gullet conveys food from the mouth into that organ. It is composed of three coats. The nerves of the stomach are numerous, and come from the eight pair. It is destined to receive the food, and to perform the first part of the process of digestion, and its appendages are the organs which have to convert the food into blood.

294.—Descending colon, rectum, and anus. The red and blue blood-vessels are the sigmoid branches of the mesentery.

295.—The liver (it being the largest gland in the body), is destined for secreting the bile. It weighs about four lbs. It is of a dark reddish-brown colour, and is divided into three lobes: in the right is a depression, in which is situated the gall bladder. See No. 286.

296.—The large blue vein is the ascending vena cava.

297.—The large red artery, the aorta.

298.—The small branches to the left and right, are the spermatic blood-vessels which supply the testicles, and out of which the spermatozoa (animal seed) is elaborated.

299.—The white glands which surround the aorta and vena cava, are the recepticles of the chyle.

300.—The spleen, or milt, with its blood-vessels. It is situated on the left side, immediately under the diaphragm.

301.—The kidneys are four or five inches long, and two and a half in breadth; they are in shape like a kidney bean, and weigh about ½ lb. each. In the centre there is a bag called the pelvis, which tapers like a funnel, and forms the ureter, which *(duct)* conveys the urine to the bladder.

302.—A longitudinal section of the kidneys, showing the renal capsule *(f)*. The substance of the outer part called the corticle, and the inner tubular or calices at the bassinet or mouth of the calyx, this is where the urine leaves the kidneys for the bladder; it is the commencement of the ureters. The red, blue and white are the renal vessels which supply the kidneys.

303.—A man's bladder laid open. This vessel is composed of three coats; the external is serous, the middle muscular, and the internal mucous. The last secretes a mucous which prevents it from being injured by the corrosiveness of the urine. The urine is retained in the bladder by means of a circular muscle called a sphinster, which draws the mouth of the organ together. The bulb at the base represents the prostate gland. (3.3.) Vasa-deferentia. (4.4.) Vesiculæ-seminales.

304.—A longitudinal section of the heart, with the large blood-vessels. (18). Right auricle. (21). Right Ventricle. (22 and 23) Attachment of the tricuspid valve.

305.—Aorta. (34). Arch of the aorta. (44). Clavical artery. (45). Jugular veins; nerve-pneumon and gastric; part of the thorasic duct.

306.—Another section of the heart. (H) Commencement of the aorta. (K) Semilunar valve. (L) Mitral valve. The valves of the heart open and close more than one hundred thousand times a day, and if by any irregularity they fail to perform one single pulsation, life itself is in danger of being extinguished, so that the poet might well sing:—

"Our life contains a thousands springs,
And dies if one be gone;
Strange that a harp of a thousand strings,
Should keep in tune so long."

307.—The under or abdominal side of the midriff or diaphragm. This is the transverse muscle, which separates the chest from the abdomen, and when the air is expelled the contents of the abdomen push the midriff so as to make its middle part convex towards the chest. There are perforations in the midriff to allow a passage for the gullet and blood-vessels.

308.—The right lung (the organ of respiration) divided into three lobes. All the blood in the body passes through the lungs, and is there purified; carbonic acid and water are dissipated, and the blood becomes oxygenised. Dr. Lizars computes the air cells in the lungs to be 600,000,000; and about 57 hogsheads of air are drawn through them daily. This air comes in contact with 24 hogsheads of venous, and converts it into arterial blood daily. The lungs fill the greater part of the chest, the heart being the only other organ. The size of these organs are large or small according to the capacity of the chest. If the reader is wishful to avoid the many diseases which the lungs are subject to, I would strongly recommend him to procure and study a little work by Dr. Hitchman, M.D., L.L.D., the title of which is "*Hitchman on Consumption.*" In a passage, on page 4, he says:—"The average difference of the vital capacity of human lungs in health and in consumption is 93 cubic inches; the healthy standard of man being 222 inches, and the phthisical (consumption) 129. This enormous disparity will serve of itself to apprise each thoughtful student of the *necessary* constitutional disturbance from diminished respiratory volume, as well as the necessity, nay, the urgent necessity, of attending to the pre-tubercular stage of pulmonary phthisis."

309.—The left lung. Part of the pleura has been removed, and the ramifications of the blood-vessels, and bronchial tubes portrayed. The lung is divided into two lobes, and each into lobules, which are connected by cellular tissue; lobules are again divided into very small air cells.

310.—Muscles of the chest and abdomen. The skin having been removed, the mammary glands (breasts), containing milk, are faithfully portrayed. One of them is laid open, shewing every minute milk cell with the blood-vessels intermixed. In this part milk is made from the mammary artery. The ribs, in-

tercostal muscles, abdominal ditto, and the hypogastric blood-vessels, are beautifully portrayed.

311.—Similar, representing the chest and abdomen of man.

MODELS OF THE BRAIN.

312 to 328.—Sixteen sections of the cerebrum, cerebellum, pons-varolii, medula, oblongata, and spinal cord.

The MIND of man performs its functions through this important organ. Its shape is an exact counterpart of the interior of the skull. The average weight of the brain is about three pounds and a half, but it varies greatly in different individuals. That of Cuvier was the heaviest on record, namely, five pounds. The brain consists of three portions, each distinct. The cerebrum or great brain; the cerebellum or little brain; and the pons-varolii or central brain. Along its base nine pairs of nerves appear to rise, and all save one, the nerve of smell, can be traced to the spinal cord. These nine pairs are thus arranged:—1st pair, nerves of smell; 2nd pair, sight; 3rd, 4th, and 6th, moter nerves of the eye; 5th, nerves of taste; 7th, partly nerves of hearing, partly giving expression; 8th, swallowing food, or deglutition; 9th, moter nerves of the tongue. On cutting either hemispheres of the brain the latteral ventricles may be seen, in which water is generally found in hydrocephalus or water on the brain.

329 to 337.—Eight sections of the cerebrum, cerebellum, and pons-varolii. Model of the cerebellum with the spinal cord giving off branches as follows:— Eight pairs of nerves called cervical, proceed from and to the neck; twelve pairs, called dorsal, proceed from and to the back; five pairs, called lumbar, proceed from and to the loins; five pairs, called sacral, proceed to the sacrium; and two sciatic nerves branch off and to the lower extremities.

338.—Model of the cerebellum, with the medulla-oblongata.

339.—Sections of the cerebrum and spinal cord. See 871.

340.—The crown of the skull of an adult, the periosteum in-

vesting it. At birth we have eight bones, composed of two plates, one above the other, with a porous partition between them. These plates are capable of giving the brain very powerful protection against injury, the outer one being fibrous and though, the inner one hard and glass-like.

341.—The scalp, or hairy integument upon the skull.

About 94 models, contained in ten glass cases, will form the next subject of notice, consisting of the bones, muscles, tendons, blood-vessels, and nerves of the head, trunk, and upper and lower extremeties of the human body. As models of the human body, it need only be stated that their approximation to perfection is such as to have induced the most eminent medical gentlemen of England, among whom were Sir Charles Bell, K.G., F.R.S.; B. C. Brodie, Esq., M.D., F.R.S.; Sir Astley Cooper, F.R.S.; Joseph Henry Green, Esq., F.R.S.; Marshall Hall, Esq., F.R.S.; and Herbert Mayo, Esq., F.R.S., to write letters of high commendation to Dr. Auzaux, of the Paris School of Medicine, the talented modeller, who, for this effort of his great genius and artistic skill, was decorated with the Legion of Honour of France There are 24 muscles of the head and face, the greater portion of which are called facial muscles, and are conveniently arranged as follow :—

IN THE REGION OF THE EYE.

342 to 348.—There are three MUSCLES situated on each side. First, the orbicular, which surrounds the eye and closes the eyelid. Second, the tensor, arising from the inner side of the orbit, and inserted in the lachrymal ducts from which comes the flow of tears. Third, the corrugator, arising near the root of the nose, extending outward till it is lost in the eyebrows. When in action, the skin of the forehead is wrinkled vertically.

THE MUSCLES IN THE REGION OF THE NOSE ARE FOUR IN NUMBER.

349 to 353.—The pyramidal, arising from the broad muscle of the forehead, and inserted in the following, in its action wrinkles the skin of the upper part of the nose. (2) the compressor, arising in a hollow of the upper jawbone, passes across the nose till it meets with the corresponding muscle on the other side. (3) Its action compresses the nostrils. (4) The levator is

attached to the head of the orbit, the wing of the nose, and the upper lip. This raises the nose and upper lip.

IN THE REGION OF THE UPPER LIP THERE ARE THREE MUSCLES ON EACH SIDE.

354 to 360.—The superior levator of the angle of the mouth, arising from the upper jaw, is inserted into the angle of the mouth. Its use is to raise the angle. (2) The superior levator raises the upper lip. (3) The superior depresor, arising from the upper jaw, just over the front teeth; its insertion is in the upper lip and side of the nose—in action it draws down the upper

IN THE REGION OF THE LOWER LIP THERE ARE THREE MUSCLES ON EACH SIDE.

361 to 367.—The depressor of the angles of the mouth. (2) The depressors of the lower lip, both arise from the outer surface of the jawbone. Their use is to lower the lip and its angle. (3) The levator of the chin takes its rise from the bone over the lower front teeth, and is inserted in the lower intreguments of the chin, and, by contraction of its fibres raises the chin and lower lip.

THE MUSCLES BELONGING TO THE REGION OF THE MOUTH ARE SEVEN IN NUMBER.

368 to 375.—(1 & 2) Greater and smaller zygomatic, attached to the external surface of the cheek-bone and the upper lip, near the angle of the mouth. In action they bring the lip and mouth closer, thus elevating the angle of the mouth. (3) The buccinator has attachments to both the upper and lower jaw, its fibres pass horizontally to be inserted into the angle of the lips, and its use is to diminish the cavity of the mouth. (4) The orbicular of the mouth has no attachment to bone; its fibres surround the mouth, and close it by their contraction.

The muscles we have now particularised act as indications of the passions, affections, and the emotions of the mind. They throw animation over the countenance, and are interesting to the artist, the poet, and the physiologist.

376 to 386.—In the same case will also be seen (377) masseter, (378) Crico-thyoidien. (379 and 380) Sterno-thyoidien. (381)

Zigomatic-arch-bone. (382 and 383) Sterno and omo-hyoides. (384 and 385) Sterno cleido-mastoideus. (386) Temperal. (386A) Also the thoroid gland.

387 to 394.—(388) Deltoid. (389) Pectoralis major. (390) Do. minor. (391) Latissimus dorsi. (392) Triceps. (393) Subscapularis. (394) Scapular minor. (394A) Scapular angular.

395.—Internal oblique.

396.—Transverse muscle of the abdomen.

397 to 409. Twelve models of muscles of the arm and hand. Those of the radial region belong to the thumb, and provide for three of its movements, abduction, adduction and flexion. The Ulnar group in like manner are subservient to the same motions of the little finger, and the interossei are abductors and adductors of the several fingers. The models also portray every blood-vessel and nerve of the muscles.

410—Bicepts-femoris

411 and 412.—Gemellus, superior and inferior

413.—Quadratus-femoris.

414 and 415.—Gastrocnemius, major and minor.

416.—Tendon Achilles.

417.—Plantaris.

418.—Part of vastus externus.

419.—Latissimus-dorsal.

420.—Biceps of the brachialis.

421.—Brachialis-coraco.

422.—Supinate-longus.

423.—Pronator-radii.

424.—Flexor-carpi-radialis.

425.—Palmaris-longus.

426.—Palmaris-petite.

427.—Palmaris-round.

428.—Fasciculi of the flexor, sublimis digitorum.

429.—Annular ligament which embraces the wrist.

430 and 431.—Adductor and dorsal.

MUSCLES, BLOOD-VESSELS, NERVES, AND DORSAL TENDONS OF THE LOWER EXTREMITY.

432.—Perone-longus.

433.—Extensor-longus.

434.—Tibial-anticus.

435.—Extensor-pedis.

436.—Flexor-pedis.

437.—Flexor-longus.

438.—Flexor-pollicispedis.

432.—Accessories of the muscles of the foot

440.—Tendon.

441.—Abductor pollicispedis.

442.—Interosseia-dorsal.

443 and 444.—Maximus, medius, and minor gluteus.

445.—Pyriform.

446.—Adductor-longus.

447.—Adductor-brevis.

448.—Crural-longus.

449.—Crural-brevis.

450 and 451.—Major and minor complexus.

452.—Scalenus-anticus.

453.—Thyro-hyoides.

454.—Multifidus spinal muscles; they embrace attachments to the whole of the spinal column.

455 to 457.—Right and left rectus, or straight muscle of the thigh.

458.—Sartorius, sometimes termed "Tailor's muscle."

459.—External oblique muscle of the abdomen.

460.—Rectus.

461 and 462.—Soleus.

463.—Tendon of Achilles.

464 and 465.—Linea alba, white line of the tendons and muscles of the abdomen.

466.—Serratus posticus.

467.—Ditto inferior.

468.—Multifidius lumber muscles.

469.—Accessors of the long dorsal ditto.

470.—The longissimus dorsi.

471.—Splenius of the neck, &c., &c.

Cards with explanations written thereon of the functions of the muscles, &c., are affixed in the cases. Also see Dr. Auzaux's models, Nos. 586 and 587.

472 to 488.—A phrenological chart, with human skulls and models of heads, for study.

489.—The head of a New Zealand Chief. He was killed in one of the wars with England; the opening made by the ball, which is supposed to have been the cause of death, may be seen on the back of the head. The skin of his face has been very elaborately tatooed.

490 to 504.—Two cases of human bones (see cards descriptive of the contents).

MODELS AND PREPARATIONS IN THE MIDDLE OF THE MUSEUM.

506.—Male skeleton, with movable articulations.

507.—Female skeleton, with ditto.

508 to 520.—In a case will be found bones of the arm and hand, ribs, knee-caps, &c.

521.—A horn of the spring buck.

522.—The bones of the human vertebræ.

523.—The skull of Scott, of Preston, the murderer.

524.—Part of a Russian soldier's skull; the frontal bone has been shattered by a bullet.

525 to 526.—Two sections of skulls, shewing (A) the occip-

ital, or back part; (B B) two parietal, or side walls; (CC) two temporal; frontal, sphenoid, and ethmoid.

527 to 544.—The bones of the arm, scapula, clavical, humerus, ulna, and radius. Besides these there are in the wrist and hand not less than 27 bones.

Say, did these fingers delve the mine;
Or with its envied rubies shine;
To hew the rock, or wear the gem,
Can nothing now avail to them?
But, if the page of truth they sought,
Or comfort to the mourners brought,
These hands a richer meed shall claim
Than all that waits on wealth or fame."

545 to 575.—The bones of the leg and foot, are the femur, tibia, and fibula; patella (the knee-bone), tarsus, metatarsus, and phalanges, in all 30 bones in the leg and foot.

"Avails it whether bare or shod,
These feet the path of duty trod;
If from the bowers of joy they fled,
To soothe affliction's humble bed?
If grandeur's guilty bribe they spurned,
And home to virtue's lap returned,
These feet with angel wings shall vie,
And tread the palaces of the sky."

VERTEBRÆ—BONES OF THE SPINAL COLUMN.

575.—(7) Cervical. (12) Dorsal. (5) Lumbar. (5) Sacrum. (4) Coccygeal vertebræ.

577.—Skeleton of a rattle-snake. Muscles and skeleton of a sword-fish.

578. Skeleton of a viper.

579.—The skull of an elephant.

580.—The ivory tooth of an elephant, weighing 5½-lbs.

581.—A rare specimen of a tooth from the jaw-bone of an ante-diluvian animal now extinct. It is solid ivory, and weighs tea pounds and a quarter.

582.—Cervical vetebræ of the whale.

583.—Dorsal ditto ditto.

Many other human bones, each having an explanatory label thereon.

The composition of bone consists of phosphate and carbonate of lime, cartilage and gelatine; the hardness depends on its earthy matter. Bones are composed of two structures, namely, a compact tissue externally, and a cancellated tissue internally. The latter is composed of fine bony plates or lamina, so as to form a cancellated net-work. Bones are surrounded by a membrane called the periosteum, except at their articular cartilage, and are divided into long, flat, and irregular. The same number of bones exist both in male and female; and the only difference in the skeletons is, the bones of a woman are lighter and more elegant than those of a man. The thigh bones are much more separated in the female, and the pelvis is longer in both diameters, for the purpose of containing the important organs situated in that region. In the male the chest is broader than the hips, but in the female the contrary is the case. The skeleton being the framework on which the Great Architect has constructed his masterpiece—Man—is worthy of particular study; and the lecturer will point out the numerous beauties existing in what has been by many erroneously considered a repulsive subject.

584.—A life-size model of a man, showing all the superficial muscles in the human body.

585.—A full length model of Venus de Medici. It is a true copy of the Marble Statue now in the Pio Clementino's Museum in Rome.

586.—A perpendicular section of the human trunk from the neck to the thigh, showing half the vetebræ, also deep-seated muscles, and the great sciatic nerve.

587.—A section of the head and neck of a man, showing at (A) the lower jawbone; (B) jugular vein; (F) the carotid artery; (D) the first rib; (C) the subclavian artery; (Q R) the sterno-thyroides muscles; (S) ditto cartilage, with nerves spreading over all the parts.

EXTRAORDINARY SUPER-FŒTATION OF TWINS—ONE OF THE CHILDREN WAS WHITE AND THE OTHER BLACK.

VULGAR RIDICULE.—There is nothing that has more retarded the advancement of science and learning than the disposition of

ignorant and vulgar minds to ridicule and vilify what they cannot comprehend.

588.—This full length Florentine model represents a young lady in the act of parturition; the skin and muscles of the abdomen having been removed, the stomach, intestines, liver, and uterus, are brought into view; the later organ is laid open, and its contents are distinctly visible, namely, two children and two cords, and only one placenta.

The young lady was delivered of twins, and the peculiarity in the infants was, that one was of the finest features, being perfectly white, which would have done honour to an English mother; while the other was of a true African build, black as ebony, with enormously thick lips, woolly hair and long heels.

A similiar case is related by Dr. Richerand, in his "Elements of Physiology," 5th edition, page 711: "A white woman near Philadelphia was, by Dr. Dewee, delivered of twins, one of whom was perfectly white, the other black: the latter had all the characteristics of the African, whilst the former was delicate, fair-skinned, light-haired, and blue eyes."

Again, the *Edinburgh Journal*, vol. 3, page 322, says, Dr. Delmas has related a case exactly similar, which fell under his observation. In his case there was only one *Placenta* for the two children.

Again, see Dr. Blundell's "Obstetric Medicine," page 924. He says, "Buffon relates the case of two impregnations, produced in succession by a white man and a negro, with the same woman; the result being a white child and a mulatto," &c., &c.

SOMETHING LIKE A MIRACLE.

589.—This full-length Florentine model of Louise Lateau, possesses more than ordinary interest, and for the truthfulness of the strange story I am about to relate, I beg to inform the public that more than one hundred physicians, and other scientific gentlemen and professors of universities in Belgium, have put Louise Lateau through every test that could be devised. These men of science have borne testimony to the following facts. Also, see *Macmillan's Magazine* for April, 1871; *Lancet*, for April 22, 1871; Dr. Hammond's *Quarterly Journal of Psychological Medicine, &c.*

Louise Lateau was born in January, 1850, at a place called Bois d'Haine, half way between the towns of Mons and Charlerio, in Belgium, and until she was seventeen years of age enjoyed robust health. However, from the beginning of 1867, till the 16th of April in the following year, she suffered intensely from neuralgic pains in the head; her appetite was completely gone; and, on the 16th of April she was so exhausted that her friends thought she was dying, and in consequence she received the sacrament. From that day she so rapidly improved, that, on the 21st, she was able to walk to the parish church, at a distance of three quarters of a mile. This may be regarded as the turning point from a girl to a woman. And now comes a new phase in her history. Three days from this walk, the *Stigmata** first appeared, and thirteen weeks later, July 17th, she began to exhibit the phenomena of Ectascy, or Trances. On Friday, the 24th of April, 1868, blood began to issue from her left side, between the fifth and sixth ribs. On Friday, May 8th, blood began to flow from both feet, from the upper surface as well as the soles, and by nine o'clock it also flowed from the palms and backs of both hands. Finally, on the 28th September, the forehead also became moist with blood, and subsequently began to flow there also. These bleedings have recurred regularly every Friday up to the present date 1877. There are no wounds, nor is the skin cracked or broken during the week. The quantity of blood lost each Friday is from seven-eights of a quart to half a pint; the flow of blood often continues twenty-four hours.

The Ecstatic Fits or Trances. On the 17th of July, 1868, she fell into her first fit of confirmed Ecstacy, and a similar attack has occurred regularly every subsequent Friday, at nearly the same hour, beginning between eight and nine o'clock in the morning, and ending about six in the evening. From the time that the ecstacies begin she becomes perfectly immovable, with her eyes wide open, but fixed and turned upwards. The bleeding hands rest enveloped in cloths on her knees, at the same time blood is oozing out of the stigmata of side and feet, and it trickles down her temples cheeks, and neck. The expression of her face is that of wrapt attention, and she seems lost in the contemplation of some distant object, and at other times her features are so animated and full of emotion, and a face which ordinarily is almost plain, becomes positively beautiful.

The fits terminate in a most apalling manner; the arms fall; the head drops on the side of the chest; the eyes are closed; the nose becomes pinched, and the face becomes very pale; while the hands feel like pieces of ice, and a cold sweat breaks out over the whole body. In a little time the eyes open, one object after another is looked at and recognised, and the ecstatic fit is over.

Sometimes she is induced, by hard persuasion, to tell what she has seen and heard.† The functions of the organs of special senses are totally suspended. She is now twenty-seven years old, and she has been in this extraordinary state nine years.

* *Stigmata* is a term applied by Roman Catholic writers to the marks of the wounds on our Saviour's body, as shown in most pictures of the Crucifixion.

† For the authentic report of these revelations see *McMillan's Magazine* for April, 1871.

EXTRAORDINARY FREAK OF NATURE
OF A MAN BEING DISCOVERED IN THE "FAMILY WAY."

590.—This Florentine model of the full size of a male, represents the remains of the late Thomas Lane (formerly of Sherborne, Dorsetshire), after the *post mortem* examination had been made. The abdominal viscera is laid bare, and a fœtus or child is seen, with the umbilical or naval cord attached to the duodenum. Nathaniel Highmore, Esq., M.D., was the operator, and the phenomenon was so great that the remains of Thomas Lane, together with the child, were preserved, and the Corporation of the Royal College of Surgeons obtained possession of them, and placed them in their Museum, where they remain to this day (1877). The Directors of the Royal College of Surgeons have given elaborate descriptions of this case, which may be seen in the catalogue of the musem.

It may also be interesting to the inquirer to learn the opinion of the late eminent Dr. Blundell, then Professor of Midwifery in Guy's Hospital, in his work on "Obstetric Medicine." At page 922, he says. "Some years ago I was shown, by Dr. Highmore, of Sherborne, a preparation of a child, of the size of six or seven months, which had been taken from the body of a young man. The youth (literally and without evasion) *was with child*, for the fœtus, or child, was contained in a sac communicating with the duodenum, and was connected to the side of the *cyst* (or sac) by a short umbilical or naval cord. This child did not make it appearance till the youth was eight or ten years of age, or more, when, after much enlargement from this "*Pregnancy*," and much pain and flooding, the youth died.

"This case is not singular: there are others on record, to wit,—a seed or an egg, when impregnated, may lie for years without becoming developed: a serpent may become enclosed under the egg-shell of a goose, the shell forming over it as the small viper lies in the egg-canal of the goose. These facts explain very clearly the phenomenon just narrated, for when this unfortunate child was begotten, a *Twin* was begotton at the same time; but while the *brother* formed in the usual way, the impregnated egg of his *sister* lay dormant: and without resistance became closed up within the brother's abdomen. So like the serpent in the egg-shell, or the seed in the bag, or the egg upon the shelf, these living rudiments lay quiet for a few years,—so within the body of the brother the impregnated egg lay, and then, formation commencing, the wonder and the catastrophe (death) ensued! The young man became *pregnant* with his twin sister; his abdomen formed the receptable, where, as an egg within the nest of a bird, the formation was accomplished."

Again, see Dr. F. H. Ramsbottom's work on "Obstetric Medicine," at page 665, he reports this case of Thomas Lane, and another somewhat similar, and says—"The two last-mentioned specimens are preserved in the Museum of the Royal College of Surgeons, London."

Sufficient proof has now been given of this wonderful freak of Nature and the Proprietor will now inform his friends and patrons how it is that the people of the North of England have the opportunity of seeing and discussing such an abnormal case.

When inspecting that vast collection of Anatomical Specimens (on one of those days on which the government has made the conditions imperative that the public shall be admitted free of charge), he came to this Wonderful Preparation; an idea then presented itself to his mind:—that if the Corporation of the Royal College of Surgeons deemed this case worthy of a niche in the great Museum, there could be no harm or wickedness in giving the people of Liverpool an opportunity of seeing a Model from the real preparation. Accordingly one of the best Anatomical Artists of the day undertook the execution of the work, and in a short time it was placed in the Liverpool Museum of Anatomy for the instruction of the public.

In conclusion, the Proprietor begs to assure the connoisseurs of Art that it is acknowledged by competent judges to be not only a study for the Physiologist, in which such an extraordinary freak of Nature is so accurately delineated, but the Model has also been pronounced one of the finest Art productions in England.

N.B.—This Model is Protected by Act of Parliament.

THE CÆSARIAN MODE OF ACCOUCHEMENT.

591.—This full length model represents a lady undergoing this painful operation, which has to be resorted to when no other method is possible. The union of twins whilst in the womb rendered it necessary to have recourse to this operation, in the case of a French lady. Other reasons may be the cause of this operation, such as the narrowness of the pelvis, &c.

Dr. Blundell, in his work on "Obstetric Medicine," at page 360, reports twenty-six similar cases,—one as follows:—"Dr. Lunious, a French accoucheur, performed the operation seven times on the same person, and all the children lived." Another case:—"Mary Dunally, a midwife, performed the operation with a razor on Alice O'Neal, near Charlemont, Ireland. In this case the child died, but the mother recovered." In an instance wherein Dr. White, of Manchester, performed the operation, both mother and child died; and when Dr. Dunlop, of Rochdale, operated on Susan Holt, he lost both mother and child. Out of 39 cases, 26 died, and only 13 lives survived this process.

592.—The recumbent Florentine Venus.

This figure is a beautiful piece of artistic work, and has been accomplished at immense labour and cost. The skin of the face and neck having been removed, the nerves, blood-vessels, and muscles, are brought into view, as well as the skin, muscles, and ribs of the chest; and, the skin and muscles

of the abdomen having been removed the entire viscera is seen, together with the muscles of the upper and lower extremities. The figure is dissectable.

593.—The rachrymal apparatus of the eye.

594 —A model representing back and front view of the intestines of a man.

In the front the many convolusions, with the ascending and transverse colons Behind may be seen the mesentery arteries, veins and glands; here the lacteals are beautifully developed.

595. A model of the leg (dissectable) from above the patella to the sole of the foot.

All the superficial muscles having been removed, the deep-seated muscles are brought into view, with the four tendons of the extensor digitorum, as well as the tendon of the extensor pollicis proprius. The annular ligament in the sole of the foot are here shown, the tendon of the flexor pollicis longus muscle, and the tendon of the flexor digitorum radiating into four, for its attachment to the four lesser toes, &c.

596.—A model of the shoulder, arm, and hand (dissectable).

The skin and superficial muscles having been removed, the deep-seated muscles are brought into view, together with their tendons. (1) The tendons of the long flexor and extensor of the thumb. (2) The tendons of the superficial flexor and extensor muscles of the fingers, with nerves and blood-vessels ramifying the parts.

597.—A real shoulder, arm, and hand of a man; the tendons present an appearance similar to cat-gut.

598.—A model representing a section of the base of the skull, and cervical vetebræ, with the muscles, nerves, and blood-vessels ramifying those parts (dissectable).

599.—A dissectable model of the Eye, natural size, showing (c) cornea; (ss) sclerotic coat; (T) tendinous origion of the muscles of the eye; (4 4) superior oblique muscle, passing through the pulley, at the upper and inner part of the orbit; (L) lachrymal glands (from which the tears flow).

600.—THE RECUMBENT VENUS is a model similiar to 592, the Florentine Venus.

It is selected as the most suitable for illustration in a lecture, and is, therefore, uncovered at short intervals, when every organ of the body is dissected, its structure and functions are explained, and all that appertains to development, reproduction, growth, nourishment, and decay fully demonstrated.

DREADFUL EFFECTS OF TIGHT LACING.

601.—A magnificent full-length figure in wax, the model of a young lady, formerly of Ludlow, 20 years of age, who having from her earliest childhood accustomed herself to the pernicious habit of tight lacing, suddenly dropped down dead in the arms of her partner while dancing at a ball in Birmingham. Mothers, daughters, wives, fathers, and husbands, have an equal interest in the contemplation of this figure, as it truly represents the direful consequences when people submit to the capricious dictates of fashion in defiance of the laws of nature.

603.—The Anatomical "Venus de Medici." (See 592 and 600 for a description of this model).

604.—This model represents a vertical section of a man of full size from the skull to the sole of the foot, showing half of the vertebræ, with the spinal nerves, which may be seen divided as follows :—

8	Pairs of nerves	branching off	into the	Cervical	for the neck.
18	,,	,,	,,	Dorsal	,, ribs
5	,,	,,	,,	Lumber	,, loins.
5	,,	,,	,,	Sacral	,, pelvis
1	,,	,,	,,	Coccygeal	,, extremity

"TO LOOK THROUGH NATURE UP TO NATURE'S GOD."

605 to 631.—Here are twenty-five eggs in their regular state of incubation.

The egg contains within itself all the means of nourishment up to the living bird; from the first cell or germinal vesicle. The cell floats with the yoke, and has the power of appropriating to itself, after impregnation, the various substances essential to the development of a living animal with all its organs. The yoke consists of albumen, and oil globules; the white of the egg is pure albumen, and when the germinal cell has exhausted the store found in the yoke, it continues to receive a supply of nutriment from what is termed the white of the egg. A beautiful fibrous membrane or skin surrounds the white, which separates into two layers at the broad end of the egg. A bubble of air between these two layers gives the young bird the power of breathing just before it is hatched. Two cords connect the yolk bag with the membrane at each end, and keep it in its place, or it would

rise the highest, from its specific gravity being the least. By this means the heat imparted by the mother reaches it. After fertilizatien there are two new cells, which produce others around them; these last are absorbed into the two, which continuing to increase form a mass of a mulberry colour which moves up against the yolk-bag and surrounds it. This lining membrane is like that which surrounds the stomach. In its centre is a cell with a ring-like spot upon its walls, which is termed the *nota-primitiva*, this is the nucleus, and cells are formed on this that lay the foundation of the brain and spinal cord. The heart appears early on the second day of incubation. As the yolk diminishes the whole of its sac is absorbed into the abdomen of the embryo, and stage after stage the embryo abvances, till finally the young chick breathes and breaks its shell.

In the study of embryology the same rule governs the first condition of all animals, the highest as well as the lowest, namely,

A SIMPLE CELL IS THE STARTING POINT OF LIFE.

THE ORGANS OF SENSE; OR, THE FIVE SENSES.

The organs by which we are brought into relation with surrounding objects are five in number, namely: the eye, the ear, the nose, the tongue, and the skin, which respectively give us the power of sight. hearing, smell, taste, and touch or feeling—four of these are situated in the head; that of touch is distributed over every part of the body. It is the resistance we meet within coming in contact with external objects that gives any idea of their hardness or softness; and especially when the papillæ at the end of the fingers pass over an object, do we become acquainted with its comparative roughness or smoothness. It can be improved, and made to compensate for any injury or deficiency in the other organs.

The EYE indicates to us the presence of light, and by it we take cognizance of the form, size, colour, and position of surrounding objects. Its formation shows it to be a wonderful optical instrument, so complete that it will take in all surrounding scenery and depict it upon the expanded surface of the optic nerve, and so adjusted that it can adapt itself to every intensity of light, and turn in every direction with the utmost facility. The lectures of the Demonstrator in the Museum will direct attention and explain the structure of this admirable organ. The visitor is also referred to the representations, No. 645 and No. 198.

632.—The eye magnified and dissectable:—Seven muscles. (1) Levator. (2) Rectus, superior. (3) Ditto, inferior. (4) Ditto, internus. (5) Ditto, externus. (6 and 7) Oblique, superior and inferior. (8) Lachrymal gland and ducts. (10) Cornea. (11) Sclerotic. (12) Black choroide. (13) Iris. (14) The globe or vitreous humour. (15) Optic nerve.

633.—Crystalline lens—it is double convex.

634.—The globe of the eye composed of the vitreous humour.

635.—Retina; or, the white expansion of the optic nerve.

636.—The black choroide coat.

637.—The EAR. By the sense of hearing we become acquainted with sound. This depends on the fact that sounding bodies produce by ibration undulations in the air, which are conveyed to a distance, and which the ear is adapted by its peculiar construction to receive and transmit to the brain.

In the Ear, immensely magnified, may be seen to advantage—A, Concha; M, Meatus, or canal leading to the T. Tympanum (drum.) A hollow cavity containing the drum, with four bones fixed thereon called the incus or anvil, malleus or hammer, storrip, and the os obiculare. E, Eustachian tuble.

638.—B, The semi-circular canals.

639.—Nerves of ditto.

640.—C, Cochlea. D, the vestibule and labyrinth.

641.—Auditory nerve, etc. [See No. 642.]

642.—Models of the external, middle and internal portions of the Ear, immensely magnified, dissectable.

(C) Concha of the ear; (M) meatus, or passage leading to (D) the membrane of the drum; (T) tympanum, a hollow cavity called the drum of the ear, containing four little bones or ossicles, and communicating with the back part of the throat by means of (E) eustachian tube; (S) semicircular canals; (N S) nerve of semicircular canals; (C) two sections of the cochlea, showing the internal spiral lamina, and the nervous filaments upon it; (N) auditory nerves or nerve of hearing, which enters at the back.

643.—View of the membrana tympani, or membrance of the drum of the ear, showing also the ossicles.

(A) Malleus, or hammer; (c) incus, or anvil; orbicular bone; (c) stapes, or stirrup.

644.—The petrous portion of the temporal bone having been removed the canals of the cochlea and semi-circular are seen. (6) Carotid artery. [See No. 637.]

645.—A model of the Eye, largely magnified, dissectable.

(1) The cornea, the transparent or horny part; (2) the sclerotic coat, or white. The dark spot in the centre is the pupil, surrounded by the coloured part called the iris. This is fixed in the second coat called the (3) choroid coat which is itself black. Between the 1st and 2nd coats is the aqueous humour.

646.—The double convex lens by which the rays are refracted and meet on the back part of the eye, where the object we see is impressed inverted on the optic nerve called the retina, then transmitted along the optic nerve to the soul or sensorium.

(5) The ciliary processes surrounding the lens; (6) vitreous humour enveloped in the hyaloid membrane; (7) the three straight muscles of the eye; (8) superior oblique muscle passing through the pulley at the uppermost inner part of the orbit; (9) the lachrymal glands and ducts; the apparatus connected with the tears. (See Nos. 632 to 637.)

646A.—A beautiful specimen of the King Crab, from Demarara (skeleton.)

646B.—Skeleton and skull of a Tortoise.

646C.—A very beautifully-formed nest of the White Wasp of South America.

647.—A model of the Hand. The ends of the fingers laid open shows the ramifications of the nerves.

The sense of touch is here explained.

648.—Model of the Tongue, greatly magnified, showing the three sorts of papilla which belong to the sense of taste.

649.—Model of a Tongue, natural size, having syphilitic ulcers at the root and on the tonsils.

650.—A French General, M. Le Brun, who, history informs us, was condemned to be skinned alive, and lived only fifteen minutes afterwards. His extreme agony is here depicted.

651.—Model of a transverse section of the nasal cavity. Roof of the mouth. Tongue. White nerves for taste. Valve over the wind pipe (epiglottis). Vocal cord inside the wind-pipe. 639 and 640, at O. N., the olfactory nerves (for smell) may be seen spreading out in branches on the mucous-lining of the nose.

652.—A model which dissects, showing the blood-vessels, cartlileges, and nerves on the left side of the face. The blue, represents the internal and external jugular veins; the red, the internal and external carotid arteries; between (7) and (8) in the wind-pipe is situated the thyroid gland (Adam's apple).

653.—A medium section of the face. (11) and (12) sinus or cells of the sphenoid bone, (13), (14) and (15), turbinated bones, which increase the surface of the mucous membrane lining the cavtity of the nasal organ. (E) Eustachin tube. Bone base of the nose and roof of the mouth. (19) Tongue. (20) Os hyoides. Valve epiglottis to cover the wind-pipe at (21) and (22). Lanyx (vocal cords).

654.—Model of Lanyx, internal and external. (E) Cartilage of epiglottis. (L) Back part of epiglottis. (T) Thyriod cartilage. (C) Cricoid cartilage. (A) Position of the arytænoid cartilage behind the thyroid. (W) Commencement of the wind-pipe. (W*) Inner surface of ditto. (V) Vocal cords.

655.—A section of the gullet.

656.—The cartilage which divides the inner part of the nose.

657 to 791.—We are now at the bottom of the Museum, and the next objects of interest are the Diagrams of the Marble Statues in Pio Clementino's Museum in Rome. There are 134 in whole, and the first in order are the Gods and Goddesses of the Egyptians, Greeks, and Romans, once worshipped by them as devoutly as we now worship the Almightly and His Son, Jesus Christ. 1st. Old Jupiter. Juno, Neptune, Ceres, Mercury. Vesta, Mars, Venus, Vulcan. Minerva, Apollo, Diana. Bacchus; the Graces, Cupid Amphitrite, Time or Saturn, Cybele, Pluto, Bollona,

Hercules, Pomona. Pan, Flora, Clio, Thalia, Melpomene, Enterpe, Terpischore, Erato, Polymnia, Urania, Calliope, Phœbus, Esculapius. Proserpine. Æolus, Hebe, Morpheus, Fortuna, Momus, the Syrens, Harpocrates, the Fates, &c, &c., besides the Emperors of Rome before and after the Christian era; as well as all the Popes, &c

ON ONANISM; OR MASTURBATION.

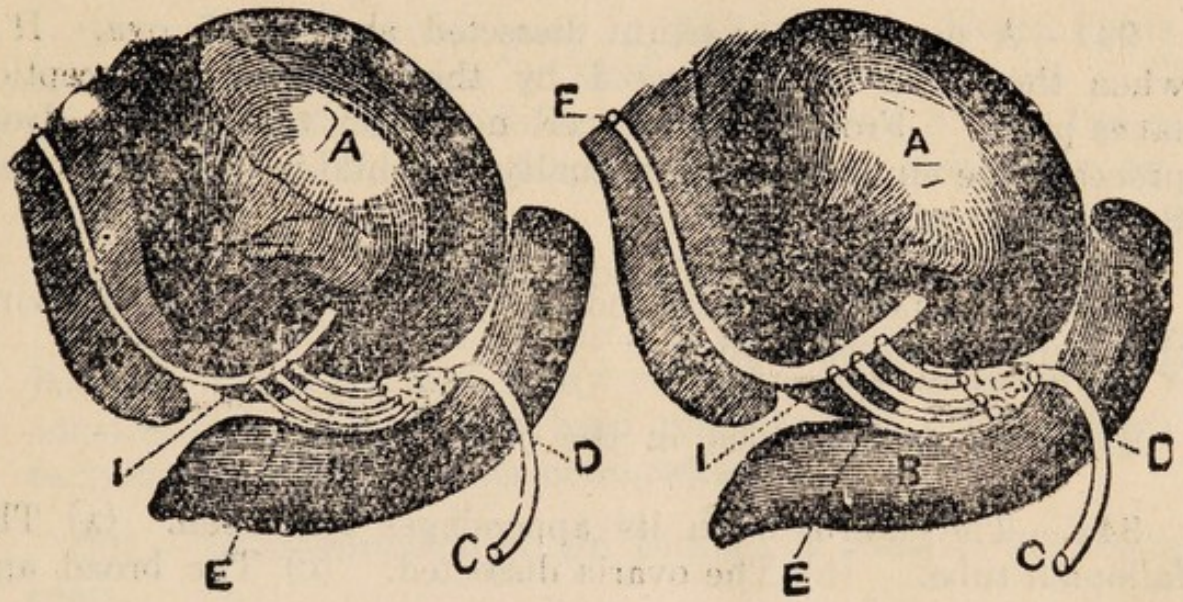
Would there were no necessity of speaking on this indelicate subject—but must we, for the sake of mere delicacy, or even from higher considerations of interest or self applause, conceal from ourselves and others, the latent cause of misery and death to tens of thousands? The frightful consequences of self-pollution *who can depict?* Continued weariness, weakness, aversion to exercise and business, dimness and dizziness of sight, paleness, impotency, barreness, palpitation of the heart, trembling, loss of memory, are they not fearful, and do they not often proceed from this cause? Commencing in youth, continued at school, and persevered in in maturity, this dreadful pernicious habit makes its inroads on the constitution just when the powers of life would otherwise have been fully and happily developed. How sedulously should parents—the guardians of youth—our teachers—and all concerned in the future welfare of society, keep their *guard* over this evil. Here what the truly pious Dr. Adam Clarke says:—"The sin of self-pollution is one of the most destructive evil

"practised by fallen man. In many respects it is several degrees "worse than common whoredom, and has in its train more "serious consequences It excites the power of nature *to undue* "*action*: hence the muscles become flacid and feeble, the tone "and natural action of the nerves are relaxed and impeded, the "understanding confused, the memory becomes oblivious, the "judgment perverted, the will indeterminate and wholly without "energy; the eyes appear languishing and without expression, "and the countenance vacant, appetite ceases, for the stomach is "incapable of performing its proper office. Nutrition fails; "tremours, fears, and terrors are generated, and thus the "wretched victim drags out existence, till, *superannuated*, even "before his time to arrive at man's estate, with a mind often "debilitated, even to a state of idiotism, his worthless body "tumbles into the grave, and his *guilty soul* (guilty of self-"murder) is hurled into the awful presence of God."

From religion turn to science, the science pertaining to bodily welfare and health, and hear what Sir Astley Cooper, one of the highest medical authorities, has to say:—"If one of these "miserable cases could be depicted from the Pulpit as an illus-"tration of the effects of a vicious and intemperate course of "life, it would, I think, strike the mind with more terror than "all the preaching in the world. The irritable state of the "patient leads to the destruction of life, and in this way thousands "annually perish. Undoubtedly this list is considerably "augmented from mal-treatment, and the use of injudicious "remedies." Again, this eminent authority, speaking of self-pollution, says:—"To such, a Venus might display her charms. "And on such a son might exhaust his quiver. No genial "spring is here, or blooming summer, or fertile autumn. But "all is winter,—a dreary, desolate, and barren winter, in which "the springs of life are frozen up, and the animal propensities "destroyed." How do science and religion agree in this counsel: "*keep thy soul pure?*" See this subject treated more at large in the "*Golden Referee;*" a work which has received so wide a circulation that the author feels it his duty to reduce the price from one shilling to sixpence.

928 and 929.—The accompanying models should be studied by every young man. The effects of Onanism are shown by the

male organs here represented in their healthy and unhealthy state :—



(A) The bladder. (B B) The rectum: (C) Spermatic cord, which conveys the siminal fluid from the testicles to (D D) the vesicular siminalis. (E) Seminal ducts, which convey the seminal fluid to the prostatic portion of the urethra, and when open allow the seminal fluid to escape with the urine.

930.—Shows the prostrate gland much swollen, and the siminal ducts relaxed and open ; it will be readily understood by looking at the position of the seminal reservoirs (D) situated between the ractum and the bladder, why the seminal fluid escapes from these reservoirs. When the seminal vessels are debilitated, and the patient has a bulky stool, or when the bladder contracts to force out the last drops of urine, the seminal fluid forces into the urethra (F), escapes at its orifice, staining the linen as with the white of an egg.

931.—Models of the Eye, shewing dimness. Effects of Masturbation.

932.—Ditto.

933.—Transverse colon.

934.—Elongation of the spermatic cord ; the testicle falls to

the bottom of the scrotum and varicocle follows. See No. 218, body; 219, face; 269, ditto; 270, ditto; and No. 261.

941—A magnified ovarium dissected, showing 7 ova. It is when the ovum in penetrated by the spermatoza conception takes place. From a simple cell no larger than a dew drop, proceeds the embryo, and eventually the child is fully developed. See Psalm CXXXIX. 15, 16.

942.—The fallopian lube and fringed end magnified, showing the course of the embryo.

943.—Ovum magnified in the ovarium.

944.—The uterus with its appendages laid open. (A) The fallopian tube. (B) The ovaria dissected. (C) The broad and round ligaments.

945.—The uterus laid open ten days after impregnation.

946.—The uterus laid open fifteen days after conception.

947.—The embryo (natural size) twenty-one days after impregnation.

948.—A magnified embryo, twenty-one days after conception.

949.—An embryo (natural size) thirty days after ditto.

950.—A magnified embryo, thirty days after conception.

951.—Embryo (natural size) forty days ditto.

952.—Magnified.

953.—Embryo (natural size) fifty days ditto.

954.—A fœtus, two months after conception.

955.—A fœtus three months after conception.

956.—A fœtus four months after conception.

957.—Ditto five ditto.

958.—Ditto six ditto, lying in the egg-skin. Every fœtus lies in such a skin, which is filled with liquor amnii. Three purposes are effected by this; the free motion of the fœtus, its protection from external danger, and its easy portability by the mother.

959.—A fœtus, seven months after conception.

960.—Prolapsus Uteri (falling of the womb), which occurs to females who have had many children, and to those of weak constitutions, and, as has been remarked, it often follows too early rising from bed after confinement.

961.—Representation of Dr. Simpson's bandage for prolapsus uteri.

962.—Another case of prolapsus uteri, when the womb has fallen below the external labiæ.

963.—Ditto, ditto. A further extrusion.

964.—Instrument, by Mr. Atkinson, of York, called the Pessery, for which a high prize was awarded at the Exhibition of 1851. It is a most useful invention for prolapsus uteri.

965.—Hernia, or rupture in the groin of a woman, brought on by sprains, by lifting great weights, tight lacing, &c. See No. 601.

966.—Sexual parts of an Hermaphrodite. This individual lived for many years in the neighbourhood of Sheffield. The cast was taken from his person by Mr. Barton, sculptor of Derby. He was devoid of a scrotum, and a testicle was found on either side of the entrance enveloped with the external labiæ. The clitoris was the size of the first joint of a finger; and the mouth of the vagina was very small.

967.—Model of the Head and Face of the Hermaphrodite, as represented in the foregoing figure.

968.—Sexual parts of an Hermaphrodite, who lived in Paris. The scrotum is split ; the penis like the clitoris of a woman joined in the scrotum without being pierced ; the evacuation of urine is by an opening resembling a vagini, which is seen beneath the sexual parts.

969.—Sexual parts of another Hermaphrodite, who was born near Dresden. His scrotum consists of two equal parts ; instead of the fully developed penis, there is a species of one, but not pierced, beneath which is found an opening two inches deep, through which the urine is evacuated.

970.—Sexual parts of another Hermaphrodite.

971.—Onanism in man, showing its dreadful effects on the organs of generation.

972.—Do., the scrotum cut open, to show the state of the blood vessels; the elongation of the spermatic cord, through internal weakness; the cord being unable to hold up the testicle. See Nos. 269, 218, and 928, life-size models, exhibiting the baneful effects of self-abuse.

973 to 1003.—Thirty models of the human face—from infancy to old age—showing secondary symptoms of syphilis and gonorrhœa, in all its frightful forms. Let the thoughtless man here pause, and read a sentence from the Bible :—

"IF ANY MAN DEFILE THE TEMPLE OF GOD, HIM WILL GOD DESTROY: FOR THE TEMPLE OF GOD IS HOLY, WHICH TEMPLE YE ARE."

END.

Liverpool Museum of Anatomy,

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J. T. WOODHEAD takes the opportunity of returning thanks to the Inhabitants of Liverpool and Environs for the support which he has received during the SIXTY ONE YEARS the Museum has been before the Public.

The increasing success of the MUSEUM encourages him in the thought that the necessity and value of the study of the Human Frame is becoming daily more appreciated ; and while the groundless prejudices against it have, he trusts, seen their day, he hopes the time will not be far distant when Human Physiology will become more popular and form an essential branch of education.

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At the Annual Conference of the British Medical Reform Association held in Hope Hall, in July, 1871, Dennis Turnbull, Esq., M.D., L.L.D., L.R.C.P., L.R.C.S., L.M., Edin., President, it was unanimously resolved —"On the morning of the 13th July, Candidates for the Diploma of Membership were duly examined in the Science and Practice of Eclectic Medicine and Surgery, at the Liverpool Museum of Anatomy, No. 29, Paradise Street, kindly lent for the occasion by the proprietor, Dr. J. T. Woodhead, to whom the Examiners and Members of the British Medical Reform Association tender their sincerest thanks."—*British Medical Reform Association's Journal*, for April, 1871.

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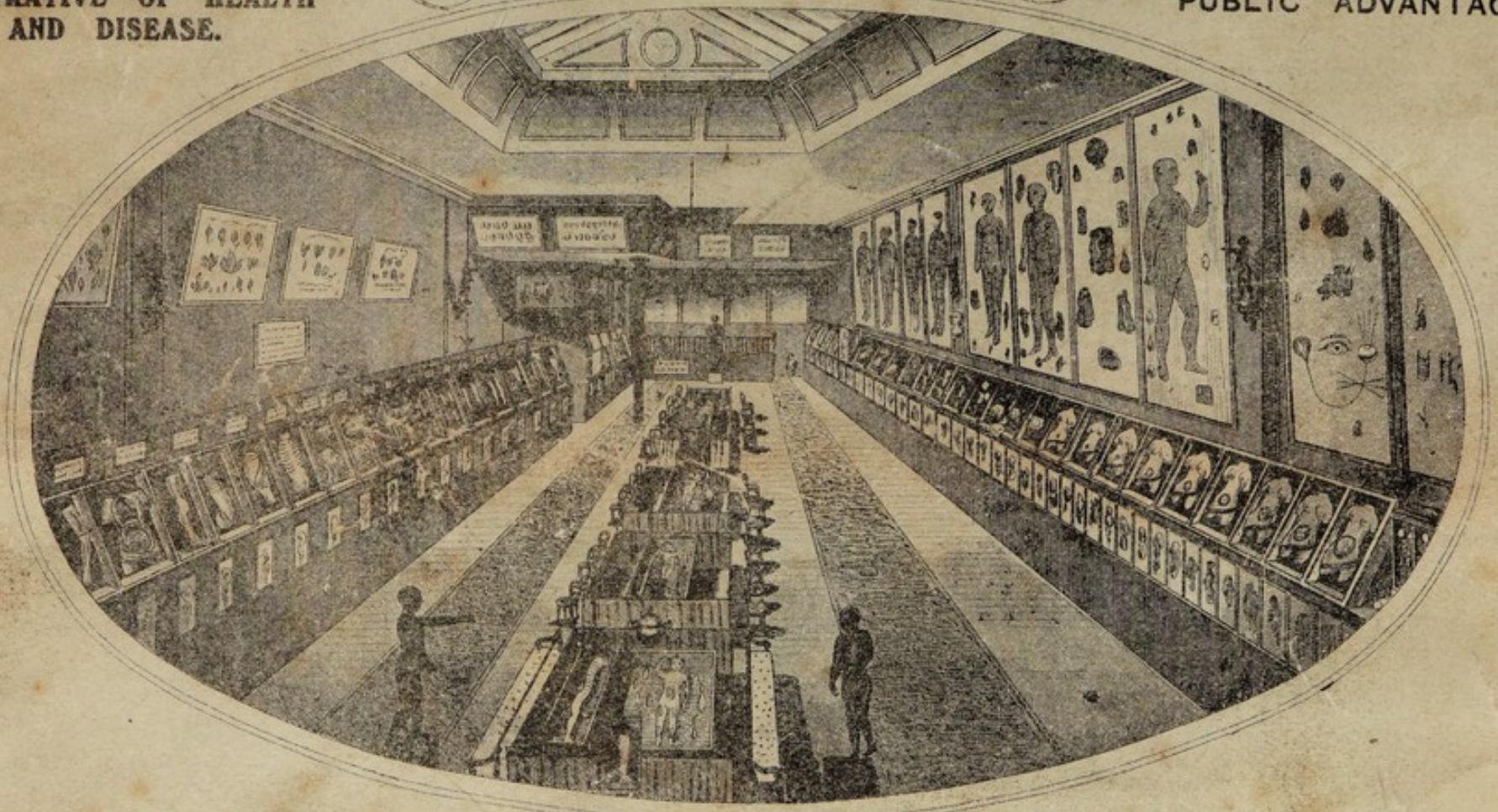

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