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By-paths of Bible Knowledge
XXI.

THE
SANITARY CODE
OF THE
PENTATEUCH

REV. C. G. K. GILLESPIE A.K.C. A.C.P.

Jewish Medicine

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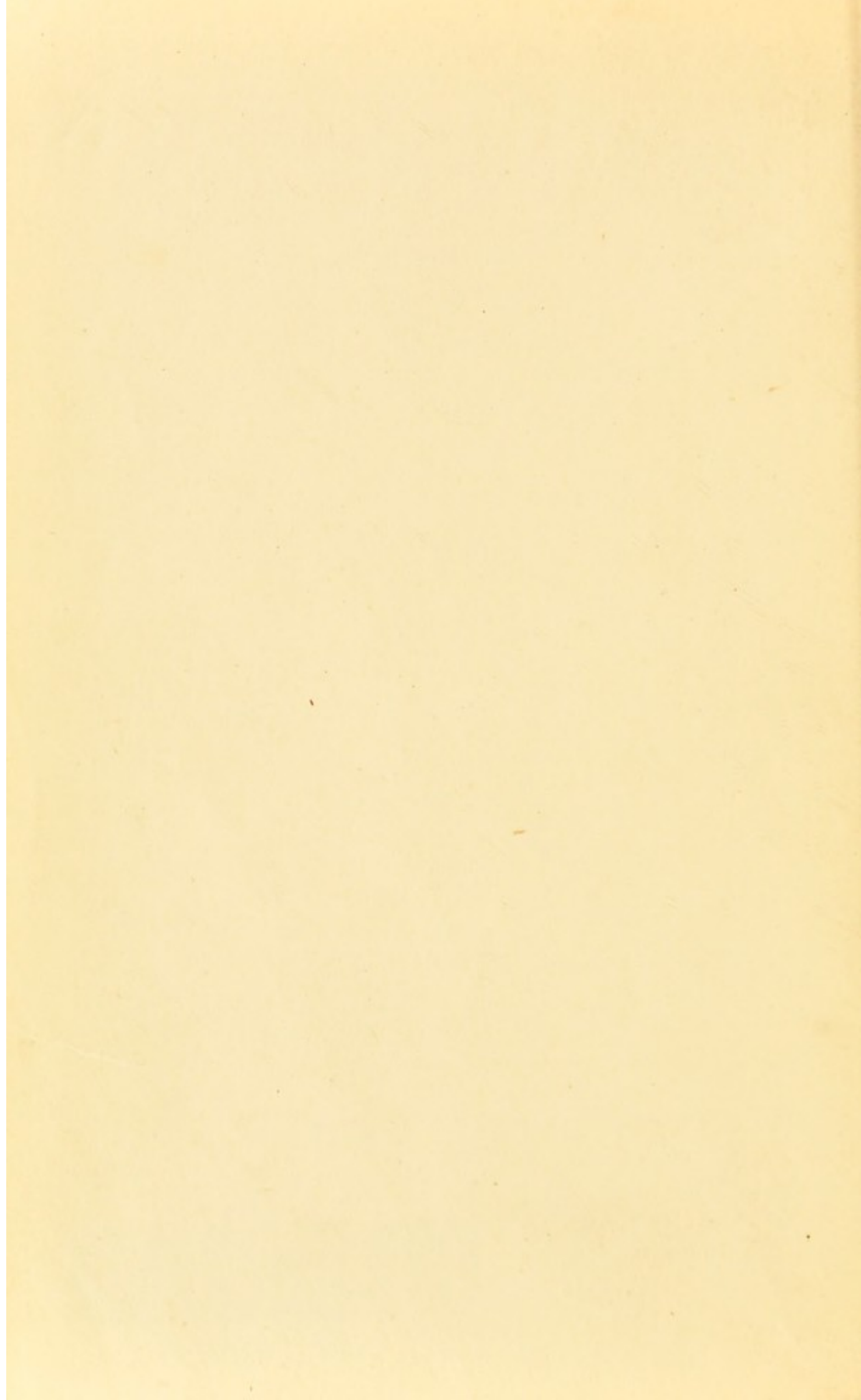


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THE SANITARY CODE

OF THE

PENTATEUCH

Oxford

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By-Paths of Bible Knowledge

XXI

THE SANITARY CODE

OF THE

PENTATEUCH

BY THE

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INTRODUCTION

FROM time to time the thoughts of scientific sanitary reformers have been turned to the Levitical law, as containing a considerable number of precepts obviously wise and practical in their direct bearing upon public health. Medical men of eminence have set forward selections, and in a few cases summaries, of such precepts, as embodying, in forms apparently limited to a special people in a special climate, principles worthy of broader, and perhaps even universal application. But such summaries have not always grasped the whole scheme, or traced the reasons actually assigned, by those best qualified to inform us, for what have to some appeared almost arbitrary exclusions, based possibly on mystic doctrine, or unscientific classifications merely exemplifying the simplicity of primitive times.

On the other hand, Oriental scholars of great learning have dealt with these provisions reverently and thoroughly, so far as concerned the true linguistic and moral force of definitions and regulations, treating them as of unquestionable value, and surrounding them with illustrations of great interest, but without indicating their truly scientific basis and system. The local fitness of each section and detail has been ascertained, and to a great extent demonstrated, by the latter form of research ; the underlying scientific principle has in several individual cases been shown by the former.

The object of this book is to bring together these two sides of investigation, to indicate their real and complete harmony no less than the wideness of their common range, and by that harmony to show that in this most definitely practical section of the common human life, as in all others, the Divine Word is the best and earliest guide.

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THE chief authorities consulted in the preparation of this book have been :—

‘Targums,’ in WALTON’S *Biblia Polyglotta*.

Mishna. Treatises—Berachoth, Gholin, Chelaim, Niddah, Shevi’ith, Shekalim, Pesachim, Bava Kama, Nega’im, Sukkah, Makshirin Editions, Surenhuys, and others.

Other Rabbinical treatises—Beth Jacob, Pesikta Rabbathi.

BUXTORF, *Synagoga Judaica*.

Critici Sacri.

BOCHART, *Hierozoicon*.

DAMIR and other Arabic writers, in Bochart.

MILL, *Catalecta Rabbinica*.

IKEN, *Antiquitates Hebraicae*.

The Koran.

JAHN, *Archaeologica Biblica*.

LIGHTFOOT, *Hebrew and Chaldee Exercitations*.

CALMET, SMITH, *Dictionaries of the Bible*.

DR. GUY, *Physician’s Vade-mecum; Public Health*.

DR. ANGUS SMITH, *Disinfectants*.

DR. SIR J. R. BENNETT, *Diseases of the Bible*.

DR. S. MERRILL, *Galilee in the Time of Christ*.

H. C. HART, *Animals of the Bible*.

FREAM, *Elements of Agriculture*.

THE SANITARY CODE OF THE PENTATEUCH



CHAPTER I

CLASSIFICATION OF THE CODE

Ancient Sanitary Science.—Jewish tradition continuous.—
Population of the Holy Land.—Specified provisions of the
Code.

THE critical investigations of recent years have done much to bring together the past and the present in matters of language, history, and even science. About the last the belief too commonly exists that our age is immeasurably ahead of all preceding times. Sanitary science is under wiser guidance. Its best

advocates among those who have access to the records of the past are ever ready to show that, however much we may have progressed in exactitude of diagnosis and classification, we owe to ancient investigators at least the germs of many modern helps to healthy life. One of these, the late Dr. Angus Smith, proved this in several interesting notes on early methods of disinfection, citing Homer, Hippocrates, Pliny, Justinian, and some ancient Egyptians, with good effect, to show that in this, as in other departments of knowledge, much had been forgotten, and rediscovered by modern research. The task now before us is to take the Book most widely known among us, the beginnings of which antedate all other history, and to trace some directions given more than three thousand years ago, in the Mosaic code, to a people whose representative descendants claim that law (Torah) as still

their own, and as the efficient cause of their survival as a strong and separate race.

To deal with this code, in matters distinctly local and national, however wide their possible application outside, without availing ourselves of the light thrown upon them by Jewish comment and practice, would be doubly unwise. The best exponents of actual usage are those through whom unbroken tradition has been handed down from days in which the Jewish nation still existed in the Holy Land: and the peculiarities of language and thought belonging to the East are best adapted for our understanding through the explanations of those who may fairly be accounted the best linguists, and, in their own departments, the most practical people in the world. The fact that Jews are found everywhere, amidst surroundings the most various, still in effect following the same code in daily life, is enough to give it a strong

claim on our attention and respect, not necessarily from the religious side alone, but also from the point of view of pure social science. It is therefore proposed to classify the particulars as they appear in the English Bible, of which the Revised Version is in this regard specially accurate, and to add to the light thus given some illustrative comments from the most trustworthy sources, ancient and modern.

It should be understood that the complicated machinery of modern town or even village life finds here but few counterparts. But even with this consideration the difference between our conditions and those of the Israelites in the Holy Land is one rather of degree than of essence. Remove the smoke, render the sewers innocuous, assume that the ordinary work of life will be carried on by the worker with the intelligent desire to make the best of

life for himself and his neighbours, and we shall find very much in this code which can with great advantage be adopted or adapted in each English home. It may be imagined that the first two foregoing assumptions are insufficient, on the ground of wide disparity of population. But careful reference shows that for some centuries the population of the Holy Land, which was crowded with cities, towns, and villages, in all probability exceeded 1,000 per square mile, and in Galilee approached 1,500 in the same space, thus being comparable with that of Lancashire, the most widely populous of our own counties. The accounts of Josephus would very largely increase this estimate.

It is not proposed to encumber these pages with long lists of authorities, or with more than brief quotations. It seems, however, convenient to state here that full reference has

been made throughout to the original text, the Targums, and the Talmud; many independent writers of early days, Jewish, classical, Christian, and Mahomedan, have been brought under contribution, and the latest experts have been consulted in corroboration.

The code gives stringent regulations in the following sections :—

1. Prohibitions against impurity inseparable from

(1) Improper food.

(2) Improper industrial methods.

2. Definitions of impurity caused by

(1) Disease, infectious or ordinary.

(2) Natural conditions requiring special treatment.

(3) Contact with an unclean thing or person.

(4) Objectionable but not forbidden food.

3. Sanitary precautions.

- (1) Structural and general.
- (2) By isolation.
- (3) By periodical inspection.
- (4) By occasional and special inspection of houses, persons, and animals.

4. Notification of

- (1) Infectious or possibly infectious disease.
- (2) Insanitary conditions of house or clothing.

5. Disinfection.

In almost all these cases full scientific reasons have been found, as given by the authorities already noted.

CHAPTER II

FOOD

Dietetic reasons for prohibition.—Exclusion of Carnivora.—Camel.—Rock-badger.—Hare.—Pig.—Weasel.—Mouse.—Prohibitions as to clean animals.—Reverence for Life.—Heathen cruelty.—Moral effects of improper food.—Unclean birds.—Unfitness not necessarily vileness.—Fish.—Insects.—Reptiles.—Polluting forms of death.—Vegetable food.

It seems desirable to consider first the prohibitions in respect of food. In some cases a moral reason is assigned as in itself sufficient ; but whenever possible the directly sanitary reason will be stated. Münster notes, as the spirit of Jewish belief, that unclean food generates putrefaction and various ailments which hinder men in the service of God, making them listless and weary towards good works,

weakens digestive power, and reduces the whole body to disorganization, so that the spirit is valueless for anything distinguished, just as if a bright light were confined in an ill-formed lantern. With practically only two exceptions (those of Lev. xxiii. 14 being religious delays), all the prohibitions in this class refer to animal food. They are given in full in Lev. xi., Deut. xiv. It is noticeable that only six beasts are excluded by name, the camel, rock-badger (coney), hare, pig, weasel, mouse; while ten are expressly sanctioned, representing four extensive kinds, ox, sheep, goat, and deer. Except in the special case of locusts, the permitted animals are named only in this section, from which the largest supply of such food would naturally be drawn. The tests given (INSPECTION, ch. vi) that quadrupeds for food must be cloven-footed and ruminant, are left as sufficient in all other

cases, absolutely excluding all carnivora; and these six are named as by their visible characters illustrating apart conditions which in the clean are combined.

The CAMEL. Apart from the importance of preserving this animal as the most valuable beast of burden, several reasons appear to render it unsuitable for food. It has a rank smell, and its flesh, though edible, is hard and really unwholesome. This is acknowledged by Arabic tradition (though not by Arabic practice), which says that Jacob forbade it to his descendants on account of an illness in the desert which he could assign to no other cause. Others find sufficient reason for the prohibition in the malicious vindictiveness of this stupid beast, which, however doggedly patient, is never the friend of man.

The ROCK-BADGER (coney), Hyrax, is of intermediate and scarcely defined race, which

was much discussed in early times. Rabbi Gershom accounts for its exclusion as being multiparous, and so resembling the cat, hare, and mouse, all unclean. It is only apparently ruminant, and, though not always accurately identified by old writers, is very often classed with the mouse kind, as the shrew-mouse, which being in Egypt held sacred to Bast, the chief goddess there, may have been on that account additionally repulsive. If a true badger, it is omnivorous.

The HARE, also only apparently ruminant, is noted as objectionable, not only as multiparous, but as often producing deformed offspring. Early medical writers describe it as causing its eater thick and dark blood. It is mentioned as of the most debased instincts, and as becoming increasingly impure with age.

The PIG (swine) is more frequently than any other beast referred to as illustrative of un-

cleanness, in which connexion are specified its unscrupulousness in food, its tendency to skin disease, and to that known as swine fever (typhoid), and its dirty habits. Rambam (Maimonides) adds very strong terms as to the impossibility of preserving, in camp or city, the cleanliness required by the law if this animal were kept for food. R. Bachia ben Asher and others record, as a general medical belief, that its milk produces leprosy. Clement of Alexandria says that the flesh of animals subject to growth of fat, and to corpulence, was wisely forbidden, and compares, as has been done in every age, the pig's life with that of the lowest class of human beings. The fatal effects of trichinosis from this food are now well known, as well as the development of tapeworm from the cystocercus of 'measly' pork.

The WEASEL. Two stories are told of this carnivorous and mischievous animal in the

Talmud, in connexion with its dangerous ferocity. In one it carries out the punishment of a breach of promise by biting the neck of the offender's little boy, who dies; in the other it strangles with its body an infant of three months. In an Arabic legend of the fall of Bagdad it appears as killing little children, and inflicting bites on men and women. This and the following are placed among 'creeping things,' with several land reptiles, probably on account of their small size.

The MOUSE, useless, noxious, exceedingly destructive to the best kinds of necessary food, prolific and multiparous, defiling all it touches, scarcely needs the additional note of Bochart, that no one would eat the domestic mouse while there was anything else to eat. The prohibition in this and other cases seems clearly generic. A curious belief appears in the question, Why does the dog recognize his master,

the cat not? The answer being, Because the cat eats mice, which disturb the brain, and mar the memory.

Two general prohibitions apply to clean animals. Fat and blood are forbidden.

Of the former it has been thought that only the suet is meant, and this only of animals killed in sacrifice. In all such cases one special word, *ghelev*, is used. It seems possible that the ordinary fat, *mishman*, was allowed, especially when enclosed in the flesh, if Neh. viii. 10 is to be read literally. The expediency of this law in the climate of Palestine needs no proof.

Of blood it must be noted that above all dietetic considerations is the moral one of reverence for life *per se*. This had a very special bearing on the whole social condition of the Jewish people. If it became necessary to kill, death must be inflicted in the most swift and merciful manner possible, of which the

rapid outpouring of the blood was an evidence. (Too great a digression would be needed to detail here the rules for the slaughterer, or to indicate the merciful methods of capital punishment.) [INSPECTION, chap. vi.] This is expounded as referring, by contrast, to the heathen cruelty of severing for food a part of a living animal, and to the eating of raw meat. On the consideration of blood itself as food there are few bold enough to include it as commendable, one exception being somewhat curiously made in the case of pig's blood in black puddings, but without more than doubtful toleration, and certainly without scientific evidence of its fitness. On this, and the necessity of proper methods of slaughter, Christian converts from heathenism were admonished by the apostolic synod of Jerusalem, Acts xv.


It has been seen that prohibition extends to all beasts of prey, that is, carnivora, whose flesh

is always rank and unwholesome, and subject to parasites. The same is observable in the list of birds, which includes insectivora. These are classified as (1) Rapacious, as flesh and fish eaters; (2) Lacustrine, as impure feeders; (3) Nocturnal, as presumably, if not certainly, impure feeders or carnivorous, since they feed in secret; (4) the ostrich, as indiscriminate in its food and feeding its young on its unhatched eggs.

Of the ostrich it may be noted that its Hebrew name is derived from its greediness, and that the words here used (*bath haya'anah*) mean 'daughter of the ostrich' (greedy one). It is described as undeveloped, having wings, yet never rising from the earth; and though the Arabs sometimes eat the young bird, here perhaps specified, the flesh is really indigestible, as also the egg, and unwholesome. Its disposition is, like that of the camel, malicious and revengeful.

On the well-known ancient belief that men acquire the habits of those animals whose flesh they eat, and in the tending or capture of which their time may be spent, these are morally classified, as tending to produce (1) love of rapine rather than peaceful and productive industry; (2) disregard of cleanliness and purity of life.

A further arrangement of the unclean birds (of which Rambam notes that practically twenty-four, but really many more, are specified), according to their food, may be convenient here. (1) Carnivorous and predaceous, taking their prey alive—lämmergeier (bearded vulture, ossifrage), glede, black-winged kite (vulture), owl (night hawk), hawk (two kinds), little and great owl, horned owl (?) (swan). (2) Carrion eaters and scavengers—eagle (which attacks only under necessity), (black) kite, raven (many kinds), Egyptian vulture (gier eagle), stork.



(3) Piscivorous—osprey, red kite (vulture), sea-mew (cuckow), pelican, cormorant, heron. (4) Insectivorous—hoopoe (lapwing), [bat]. (5) Omnivorous—ostrich. Of these the Egyptian vulture is described as ‘the foulest feeder that lives,’ an evil distinction shared, if not surpassed, according to ancient writers, by the hoopoe, feeding by preference on dunghill worms. Of this bird some curious legends are given in the Talmud, and in the Korân, in connexion with King Solomon, who is said to have used it as a water-finder, and for other magical purposes.

The BAT is included among ‘flying things,’ in which regard it is, apart from science, most conspicuous. The abominable stench of its Eastern haunts is mentioned by Layard. This and some other peculiarities of description will be dealt with under INSPECTION.

The question, Why are the clean beasts

but the unclean birds named? is answered by the consideration that the smaller number is taken in each case, the unclean among beasts, the clean among birds, being the more numerous. At least ten clean birds are mentioned in Holy Scripture, but not in the present connexion. It is, perhaps, worth while to note that life, the ordained reverence for which is referred to above, seems to preserve from ceremonial impurity as from corruption. Not only is the pollution conveyed by the unclean apparently deferred till their death, the touch of the carcase defiling, but not the touch of the same animal when living (though some Rabbins seem to regard living reptiles as defiling); but in several cases good, even noble qualities are assigned to animals forbidden as food. The ass, set apart for the use of persons of high rank; the eagle, often cited as exemplifying swift-

ness and power, and once even taken as symbolizing God's care of His people; the hawk, as Divinely gifted with instinct; the horse, as strong and fearless; the lion, emblem of the tribe of Judah, and of the greatness and power of Israel; the raven, as fed by God's providence. This fact shows that the separation of these as unclean does not imply inherent evil nature, but has a specific purpose, which convergent scientific and historical testimony proves to have been the sanitary regulation of food.

It is probable that fish was very largely eaten by the Israelites in Egypt and in the Holy Land. The name of the Fish Gate of Jerusalem seems to indicate this as a matter of extensive trade. Supplies were got from the Mediterranean, as well as the Sea of Galilee. The importance of the fishing industry there is shown by the provision against monopoly, traditionally

ascribed to Joshua (among his 'ten laws'), that any one should be free to spread his nets on the Sea of Tiberias. Large quantities were salted. The conditions requiring both fins and scales, held to exclude aquatic reptiles, amphibia, shell fish, and mollusks generally, left for food an immense supply. They forbid, among true fishes, only the sheat (*silurus*, abundant in the Sea of Galilee), lamprey, eel, and skate (all such are in Egypt accounted unfit for food). Of these the first is unknown as eatable, and the second and third are notorious as carrion eaters and as unwholesome, and the last was, until recent fashion, regarded as coarse and innutritious.

Of insects 'going upon all fours,' that is, walking as quadrupeds do, four kinds alone are sanctioned, which are almost certainly four kinds or developments of the locust, a feeder upon grain and other pure human foods.

The Targum of Palestine specifies as unclean the fly, wasp, and bee kinds, but mentions the honey of the bee as permitted.

Few reptiles are named, among 'creeping things,' called by early naturalists oviparous quadrupeds, as the next step to scientific classification: the great lizard (tortoise), gecko (ferret), land crocodile (chameleon), lizard, sand-lizard (snail), chameleon (mole), all exceedingly common in Palestine, and all really of the one lizard family. The first is described by Damir and other Arabic writers as devouring its offspring. All are really insectivorous, the larger kinds living chiefly on beetles. The Arabs believe the bite of some to be poisonous, and in the Talmudic treatise Berachoth it is said to be as fatal as that of a mad dog. This belief extends to the similar lagarta of La Plata, which, in some kinds, is of great size, extending to a length of six feet.

The eating of that which died of itself, or that which was torn, though permitted, is discouraged by the penalty of a day's uncleanness and the need of purification. But the flesh of an ox stoned for goring was totally forbidden. On a parallel passage of the Korân, M. ben Achmet adds that which was suffocated, killed by blows, by accident, or gored. The congestion any of these causes of death would produce seems sufficient dietetic disqualification. In the treatise Gholin is an assertion, curiously discussed in the Gemara, that in this category should be included birds killed with a knife instead of the thumb-nail (Lev. i. 15, v. 8).

Of the two references to vegetable food by way of prohibition, in both cases temporary, that concerning 'uncircumcised' fruit, Lev. xix. 23, comes fitly in this place. On this, Aben Ezra remarks, as the physical reason, that the fruit of the first three years is no less unwhole-

some and injurious than are the unclean fish and other animals forbidden. De Muis adds that the first fruits of land hitherto untilled have something wild and unhealthy in them. The laws referring to leaven, and to the defilement of clean food, will be considered under INSPECTION.

It should be clearly understood that the foregoing sanitary reasons are simply given as they are stated or suggested by Jewish writers of the highest reputation in the old days of Hebrew learning, with some few modern scientific corroborations. The same principle will be followed throughout. Illustrations from Arabic writers, including the Korân, are given as adding some local colour, in the debased form of tradition that book contains, from the accurate knowledge of the conditions of life in Palestine which many such writers possessed.

CHAPTER III

UNCLEANNES, TACTUAL AND PERSONAL

Grades of impurity.—Spread by contact.—Dilution.—Porous vessels.—Sources of Impurity.—Human death.—Early burial.—Treatment of the corpse.—Leprosy.—Plague in a house.—Its chemical causes.

UNCLEANNES: Tactual and Personal.—There are six Talmudical grades of uncleanness, father's father, father, first, second, third, and fourth sons. The father of fathers of uncleanness is the primary cause, as the spring of infection; the expression showing a perception that a single pernicious influence may in various organisms form separate centres of different evils. The father is a body fully infected and infectious, a source of defilement, polluting all

it touches ; the first son of uncleanness receives from this the infection, communicable in less degree to the second, from this to the third, from this to the fourth ; these polluting only food and drink, except that liquids pollute their vessels.

Thus two principles are shown. (1) The direct spread of infection by contact ; (2) its mitigation by subdivision. If a dead reptile (father) fell into water in a vessel, the water (first son) polluted the vessel (second son) : but running water, or a large quantity in a pit, was not polluted. Otherwise stated, a noxious solution in a vessel is dangerous, and when poured away the vessel must be cleansed ; but largely diluted it becomes harmless.

The contaminating influence of dead reptiles is so specially noted in the law, that they head the list compiled by Jewish writers. The probable reason is that such animals, most

kinds of which greatly abound in Palestine, might more easily than others, but for peculiar watchfulness and care, be inadvertently allowed to die and rot in the houses, which under ordinary circumstances they would frequently enter. The assiduous care for their exclusion thus contributed to order, cleanliness, and health. The remarkable fact that while vessels of other material could be purified with water, the pot, oven, or 'range for pots' (Lev. xi. 35), all made of porous earthenware, must be destroyed; a very significant hint on the conveyance of putrescible or infectious matter by absorption.

The carcase of a clean animal properly killed did not defile. But a curiously instructive question is discussed between Rabbi Juda and R. Nehemiah. If a clean bird be bitten by an unclean beast, should the wound be examined with the finger or with a probe? The

records of surgical blood-poisoning, *cellulitis venenata*, illustrate this prevision of some very early interpreters of the Law of Health in Purity.

The sources, fathers of fathers of uncleanness, were five, a corpse, a diseased issue, a carcase, and two natural conditions ; to which idolatry was added as a father of four fathers. These five were held to include the eleven species named in the Law, which were classed thus : (1) Reptile ; (2) carcase ; (3) corpse ; (4 and 5) diseased issue (two forms) ; (6) leprosy ; (7) water of purification (Num. xix.) ; (8) a natural act, and (9 and 10) two natural conditions : (11) the propitiatory parts of a sacrifice. Of the natural conditions (Lev. xv.) it can only be noted here that reverent Bible students find its pure moral teachings in the strongest way confirmed by medical and sanitary science, and that the highly contagious,

if not infectious character of puerperal fever, however caused, of itself is sufficient reason for some of these truly sanitary precautions. The essential idea of 11 is that the thing set apart as holy to God is not for man to touch, so that irreverence is uncleanness. In this sense the Canonical Books 'defile the hands.' The water of purification has a kindred connotation, as if to show that they who act for the cleansing of others must recognize its need for themselves. (4) The diseased issue covers an extensive range of pollutions not calling for detail, but evidently demanding the most thorough sanitary treatment. It is well to observe (DISINFECTION) the minute fulness of the law on the treatment of these cases, in some instances of vital importance to the individual and to others. These are again traced in thirty-two separate instances, the additions, as in the law itself, consisting of secondary and

tertiary forms and materials of pollution, the plague in a house being treated by itself.

In reality the most severe form of ceremonial uncleanness is that connected with human death (Num. xix.). Taking the dead body as the father of uncleanness (the cause of fatal disease being the father's father), the following grades appear :—

(*a*) Every one touching it is unclean (first son),

If the death was in a tent,

Everything in it, except any vessel with closely-tied lid, is unclean,

(*b*) Every one entering it is unclean (first son),

Everything touched by any of these is unclean (second son) for seven days.

Whoever touches any of the last-mentioned is unclean (third son) till evening.

Further, *a* or *b* must on the third day take

intermediate steps towards the removal of his impurity. Jewish writers add, no doubt with truth so far as the spirit of the law is concerned, that defilement would be contracted by the insertion of hand or head: and R. Solomon ben Jarchi seems to exclude from pollution the contents only of a vessel with cemented lid. The Targum of Palestine adds an instructive gloss: Every earthen vessel which has no covering fastened upon its mouth which would have kept it separate from the uncleanness, is defiled by uncleanness of the air which touches its mouth and its interior, and not only the outside of it.

Several useful effects appear from these laws, reaching beyond their direct influence. Their stringency tended to cause early burial, before sunset on the day of death, which, compulsory by the law in the case of one hanged (Deut. xxi. 23), and in Jerusalem by Rabbinical pre-

cept in all cases, became the general practice. Thus also it encouraged a great simplicity in the funeral arrangements ; and the fixing of the first lustration of those touching the body for the third day, checked neglectful and irreverent haste ; all of which were of definite sanitary value.

The body was washed, sometimes anointed (Matt. xxvi. 6), dressed nearly as in life, swathed in bandages (Acts v.), neither numerous nor costly, with spices in the folds. None of these usages appear to have been in contemplation of preserving it from decay, as in the detested Egyptian custom. This is shown by the remark of Martha (John xi. 39). The object seems rather to have been the mitigation of all possible offensiveness up to the time of burial. Special precautions were taken in other ways to prevent this. Luke vii. 14 indicates the startling effects produced

on the bearers when the Lord Jesus touched the bier.

When the burial was in a grave the whole of the earth above the body was held unclean, as indeed the law practically puts it (Num. xix. 16). Thus effluvium was avoided. Out of this arose the custom of leaving above the body a covered space, held to intercept the uncleanness, and really facilitating dispersion of the gases of decay.

Before leaving this section it should be noted that the law as to a tent was naturally in later days applied to the room, and even to the house in which death took place; and that no sanction for any form of cremation exists in Jewish writings.

On Leprosy more has probably been written than on any other disease mentioned in the Bible. Few details are, therefore, needed. (Lev. xii. xiii.) For the present it seems

sufficient to note that apparent and true leprosy are carefully differentiated. An important point is that in one stage or perhaps variety it seems to include a form of scabies or itch of a character sufficiently contagious to demand isolation. *Lepra Arabum*, *Elephantiasis Tuberculosa* and *Anæsthetica*, is clearly stated to be spread by contact. (Ch. viii.) The leper was said to pollute a house and all in it by his entrance, though without contact. Even to stand or walk under a tree under which a leper sat involved defilement.

Plague in a House. (Lev. xiv.) Just as salt in plaister absorbs moisture, which in dry weather evaporates, leaving marks of efflorescence, so any other improper and unwholesome element in plaister, mortar, wood, or porous stone, is found to show itself after the lapse of time. Sewage matter which has once leaked over a basement, can sometimes for years be

traced by marks on the absorbent wall. The description applies expressly to 'a house of the land of your possession,' thus in the first place to houses already built and occupied by heathens before the Israelitish settlement. The many signs of contrast in religion and morals marking the law of purity as opposed to the abominations of the heathen may enable us easily to recognize that in sanitary matters the former occupants probably often left much to be desired. The general belief is stated by Jahn, that this was the common nitrous recrudescence, rotting away the materials, then falling off in imperceptible particles, tainting the air of the rooms, and injuring the health of the inmates: and being inherent in the structure, was incurable and certain to spread, thus demanding the strongest measures of suppression. The 'salt-petre rot' is distinctly traced to solutions of putrefying refuse under the basement, or in

contact with some part of the walls. The coloured stains can be caused by traces of metallic salts, as sulphuret of iron, &c., commonly found in building stone. That the unwholesomeness is not here regarded as infectious is shown by the removal of the contents of the house as not polluted by its plague, which might be the case during subsequent operations.

CHAPTER IV

INDUSTRIAL METHODS

Agriculture.—Cattle breeding and treatment.—Textile fabrics.
—Days of rest.

THE bearing of prohibitions on the subject of industrial methods is not in all cases directly sanitary, but may fairly be considered in relation to the general welfare in things physical. Six are against confusion, and are interpreted in the moral sense, as enforcing patience with the order of nature, as against rash and prejudicial experiments. They forbid : (1) Mixture of seeds on the same land at the same time ; (2) Sowing in a vineyard ; (3) Cross-breeding of cattle ; (4) Cross-grafting of vines (all fruit trees probably understood) ; (5) Yoking together

animals of different kinds ; (6) Use of mixed fibres in dress material, Lev. xix. 19, Deut. xxii. 9-11 ; (7) Work on the seventh day ; (8) Work on national holy days.

Agriculturists generally recognize that certain conditions of soil indicate fertility, but that each variety of plants requires for its best development special constituents. It follows that, other things being equal, the exhaustion of the soil by a crop of one kind will leave it in better condition for use in the next season requiring different constituents, some of which the former will have contributed, than if both had been attempted at the same time and place. The well-known principle of rotation of crops, which seems to have been used in early days, is an extension of this consideration. An alteration in cropping allows plants of various orders to take up in turn the several parts of the manurial food in the proportion of their

needs. This variation also removes the food of insects peculiar to each succeeding crop, so that they die out. These purposes would be defeated by mixture of seeds, and all production would be weakened. Again, as to pastures, it is observed that neglected grass land produces the largest number of separate species of plants, almost necessarily weeds. Thus this law tended to greater industry over a larger area; the limitation of one kind to each piece of ground encouraged special attention to each useful product according to its purpose; and every improvement, by supplying better food to man and beast, was of direct sanitary value (the work of the seventh year, Lev. xxv. 4, was the cleaning and manuring of the land).

The great wealth of vegetable production in fruit, herbs, grain, and grass, fills up a very long list even in the present comparative

neglect of agriculture in Palestine, where, but for these salutary laws, crowding, confusion, and deterioration must have existed. Some

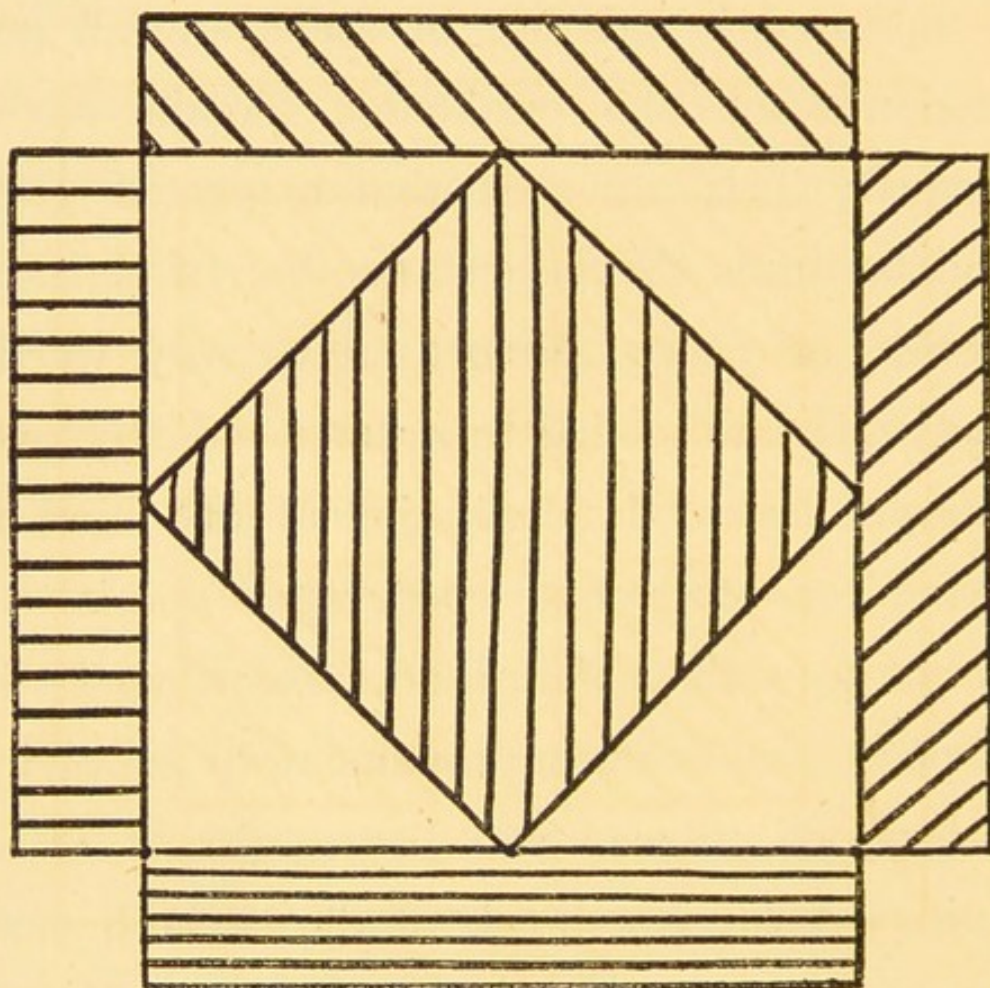


fig. 1

ingenious devices were employed to utilize as much as possible of the soil while fulfilling these precepts. In gardens planted in rows,

a space of three furrows must be left between any two kinds, which could be used as a path for tending or gathering. Four oblong beds sown with four kinds were marked out as the

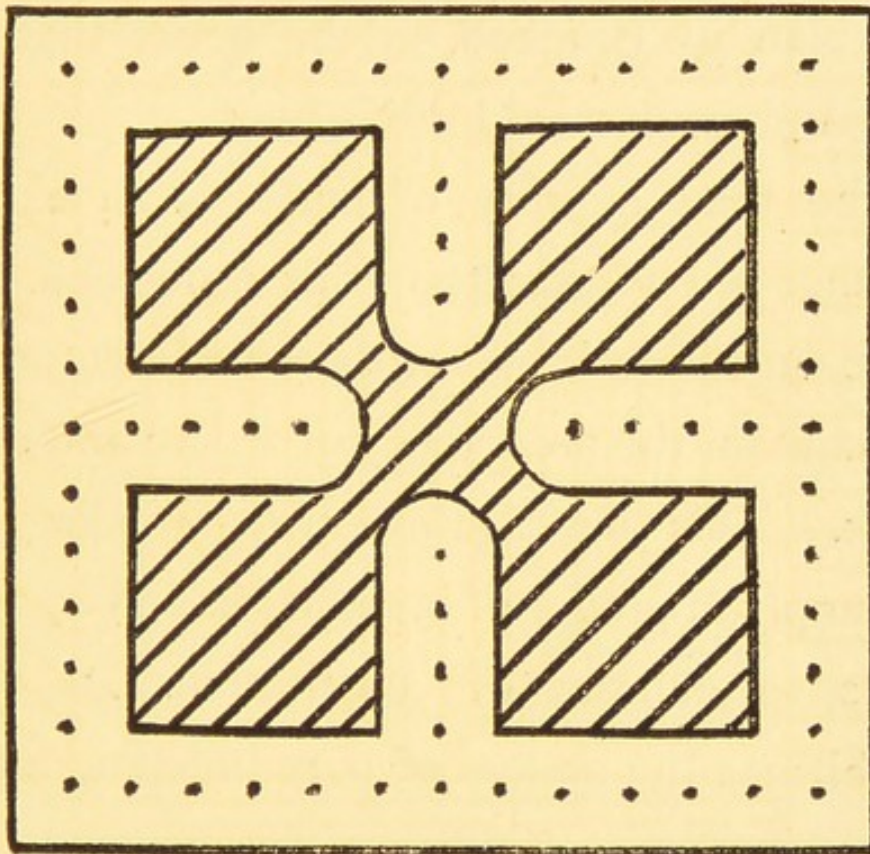


fig. 2

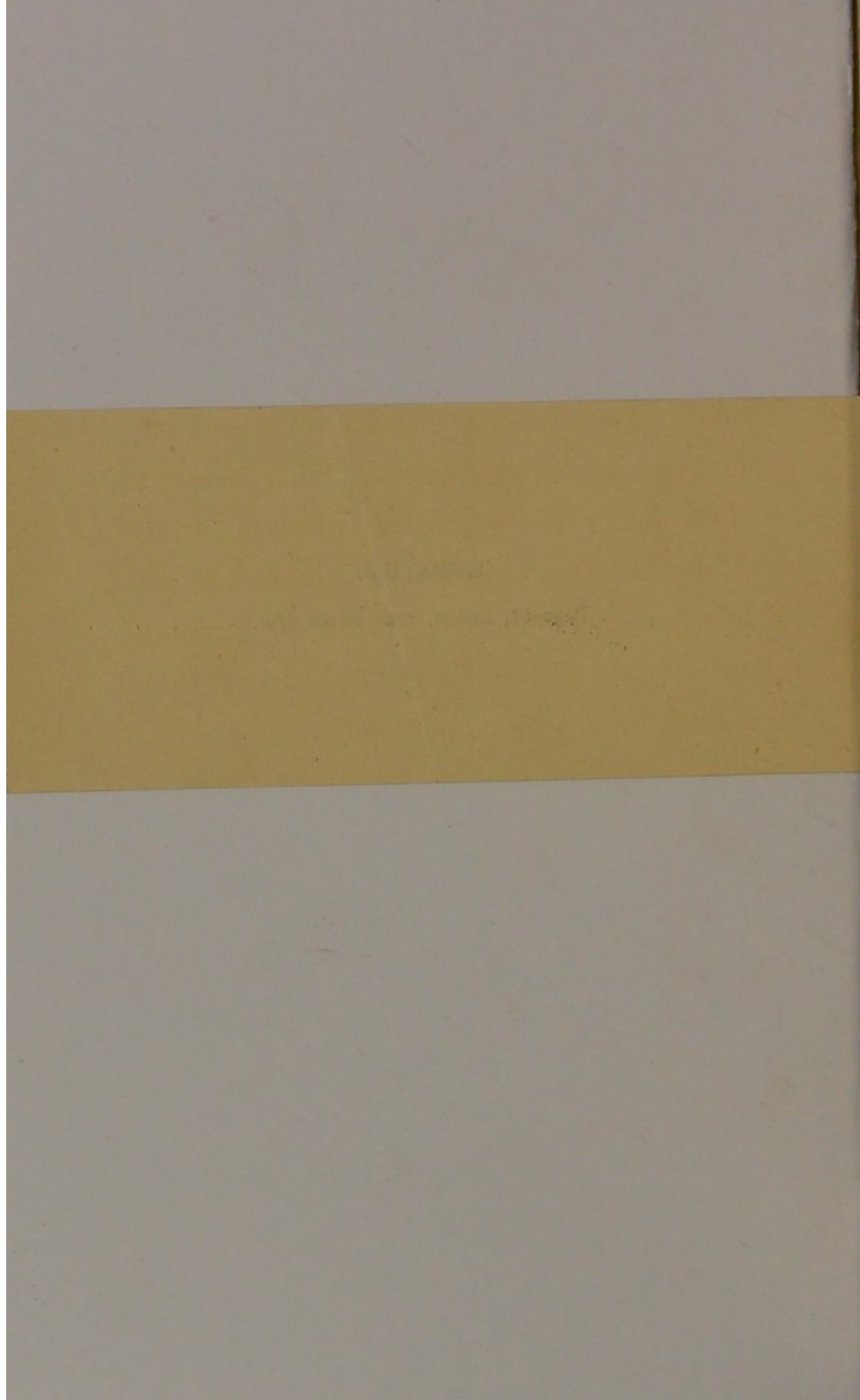
boundaries of a square; the middle points of the sides being joined formed a second square inscribed in this, and a fifth bed, the five meeting only at corners. (Fig. 1.) A space of four

cubits, about five feet, from the root of each vine or other tree being left, grain could be sown in the centre space. (Fig. 2.) In the last century an attempt was made to revive this plan in England, in the belief that both fruit and grain would profit by it.

The total sterility of mules is an extreme instance of one penalty in this connexion. But there can be little doubt that the intention was to maintain the prepotency of a pure and strong stock. This law against cross-breeding does not imply approval of breeding in and in, which tends to delicacy of constitution, but rather establishes the system of pure breeding among, it may be, many families of one original stock, the good qualities of which they perpetuate. Three important advantages are mentioned: the cost of rearing is never more, sometimes less, than in other cases; there will be less offal in the carcase, and the solid parts will

ERRATUM.

Page 51, line 4, read *unmerciful*.



have more substance, and be more wholesome for food.

The practice of yoking together animals of different kinds is evidently merciful to both animals. The stronger would often be impatient, the weaker overtaxed. The character of their paces being widely different, much strain would be caused to each of them, tending to lower their condition. Even two horses cannot at once run well together, and till they know each other's paces both suffer.

With regard to the use of mixed fibres in dress material, the very curious compound word *sha'atnez*, used only in this precept, has always been in some degree a *crux* to Hebrew etymologists. But no doubt exists as to the general fitness of the rendering given. The Talmudical explanation of this word as meaning 'curled, spun, and twisted,' is based upon the uncertain assumption of its Hebrew origin. But con-

tinuous tradition has identified it with the special mixture described (Deut. xxii. 11) of linen and woollen, as if this mixture only were forbidden: and a passage in the treatise Chelaim actually does limit the prohibition to these two fibres. In Niddah is a further relaxation: a garment in which wool and flax are undistinguishable is condemned, but it may be used as a shroud. The description of the high priest's dress (Ex. xxviii.) has always been assumed to indicate such a mixture, which Josephus expressly states to have been reserved for the priests. There is, however, reason to believe that the dyed woollen threads were there used only for embroidery on the linen. Two notes may suffice in conclusion. The forbidden fabric, linsey-woolsey, which many of us may remember as surviving in our youth, did not hold a high reputation. Johnson observes that the word was a synonym for 'mean, vile,'

like the more modern 'shoddy.' From the sanitary side, it may fairly be regarded as but imperfectly suited to ordinary work, as not easy to clean, and totally unfit for sickroom wear, as a ready vehicle of infection. It is plain that the whole idea of adulteration is condemned by these precepts.

The literature of the seventh-day rest is sufficiently extensive to render unnecessary more than brief reference here to its hygienic value. Physiologists have long recognized that short intermissions of work at regular intervals constitute the form of variety most conducive to health, and that no other period has been found so suitable as that of seven days for the balancing of physical and mental waste and reparation. It is interesting to note the very definite way in which the further advantage of national days of rest at irregular but defined intervals has been recognized in the

modern institution of Bank Holidays. These, with the Feasts of the Church, would be far more beneficial to the larger number if, as in the case of the Jewish Feasts, they were observed with definite reason, and under the controlling influence which guarded their joy from irreverence or vicious excess. It has been forcibly put that the immunity of Jews from many forms of disease is due to the joyful character of their faith and its observances, as an important factor in its general sanitary value. There is absolutely no reason excluding Christians from participation in like advantages.

CHAPTER V

SANITARY PRECAUTIONS

Structural: Flat battlemented roof.—Open spaces.—Whited sepulchres. General: Covering and removal of refuse.—Cleansing of streets, cisterns, and wells.—Water supply.—Specification of forbidden nuisances.—Traditions of Gehenna.—Isolation.—Incubation period.—The leper's place.—Ceremonial defilement.—Cleansing of garments.

EVERY house-builder was required to erect a battlement on the roof, Deut. xxii. 8, for the primary purpose of preventing accidental death by falling. By Talmudic rule the parapet must be at least two cubits high. But a reference to the conditions of life in a city or walled town at once shows the sanitary value of the very great area of open space thus provided. With a mean temperature in the highlands of 70.3° F., ranging from 55.7° in March to 79.3°

in August, that of the lowlands being naturally higher, the existence of this space on each house, still almost universal, is of inestimable value for household work, drying, sleeping, &c. Being often reached by an outside staircase, this affords ready means of egress. It is recorded of Christians at Aleppo that during time of plague they used the housetops adjoining for communication, to avoid passing through the streets.

Whiting of sepulchres, though not mentioned in the Law, was a direct consequence of the provisions concerning defilement by the dead. Many of these buildings were of such size and form as to be easily mistaken for houses but for this precaution, repeated annually after the 'latter' rain of spring. The time chosen for this was the fifteenth day of the month Adar, thus four weeks before the Passover. On that day they began to mend the roads, streets, and

sewers, and to paint the sepulchres. The purpose is thus stated: that they may be like the leper, who cries out, 'Unclean! Unclean!' here uncleanness cries out, 'Come not near!'

Among general direct sanitary precautions are that of Deut. xxiii. 12, 13, corresponding in principle exactly to the earth-closet; Lev. xvii. 13, soaking up and covering the blood with dust (some prefer to render this by 'ashes'); Lev. vi. 11, daily removal of the ashes of the burnt-offerings to a clean place. To these may fairly be added, as consequences of the training given as to cleanness of life, the daily sweeping of the streets of Jerusalem, and the very remarkable system of reservoirs, aqueducts, rain conductors and cisterns there, and of cisterns and wells throughout the country. Almost every private house in the whole land had (and has) its 'own cistern,' some having more than one, excavated in the limestone rock or walled

and cemented, preserving the water pure and sweet through the hottest season.

Of the extent of these really great engineering works much had been compiled from Rabbinical sources which may have seemed exaggeration: but the work of the Palestine Exploration Fund has shown that in the case for example of the Pools of Solomon, a sufficient illustration, of which the name represents the probable date, and their still existing connexions, these alone retaining a store of three million gallons, technical skill is indicated which would gain high credit now.

In Bava Kama these rules are recorded: within the city, rubbish heaps and dunghills were forbidden, because of creeping things; chimneys and limekilns, because of the smoke nuisance; gardens and orchards, because of the smell of manure and weeds; no dead body might remain one night, hence no sepulchre

might be built. Though these rules are expressly mentioned with regard to Jerusalem, their influence roused admiration and enterprise through the country. It is not quite certain that the 'destructor' principle was worked in the traditional constantly burning furnaces of the Valley of Hinnom, where, according to Lightfoot, Hengstenberg, and others, the refuse of the city was collected, the fluid matter being discharged into the brook Kidron, the rest burned. Gey Hinnom is admitted to be the source of the Greek name Gehenna, the hell of fire, the mouth of which was fabled to be there. In this sense Gehinnom is frequently mentioned by Talmudical writers, and the Arabic name Jehannum, in Egypt Gehannum, is well known. That the Dung Gate opened out of the almost central Tyropoeum, through which a leading thoroughfare still passes, over this valley, south of the city, seems to add some probability to

the old belief, recently disputed because local evidence has not thus far been recognized by explorers. More than this cannot be fairly assumed.

Isolation, the placing of infected or possibly infective persons out of reach, as on an island (Italian *isola*), was carefully and promptly effected. In the case of death, the provisions of uncleanness, already stated, were sufficient to guard against all unnecessary proximity. This applies in their several degrees to the various forms of uncleanness enumerated under that heading, with some additions in special cases, now to be considered. In 10 the shorter term of seven or fourteen days covered the probable limit within which might intervene the dangerous sickness there referred to, which, in the case of disappointment at the failure of male issue, might perhaps be feared during more than a week. The belief anciently prevailed

that the birth of a girl entailed greater and longer suffering and peril.

Persons were isolated for seven days on suspicion of leprosy, or of any permanent affection of kindred character. Four cases are described, Lev. xiii. 4 referring apparently to incipient (a) Elephantiasis Tuberculata, 21 to ulcerations as of (b) E. Anaesthetica, 26 to inflammatory spots, as carbuncles, showing probable susceptibility, 31 to Leprosy of the head, *Morphaea Alopecinata* (Fox Mange), Lichen of the Greeks. In (a) and (b) this term was extended to a second week, to complete the diagnosis, which in the other two cases would already be decisive. Thirteen special inspections are provided for in this connexion, giving particulars of symptoms of actual or impending leprosy, and of diseased conditions resembling its early stages. It is important to observe that the measures of permanent segregation which followed the declara-

tion of uncleanness by leprosy were of such a character as to preserve as much as possible the comfort of the sufferer, while guarding the public safety. Like the whited sepulchre, he bore distinct signs of warning. His dwelling was not absolutely 'alone,' but apart from all in health; patients having been from very early times allowed to associate, as 2 Kings vii. 3, 10, which passages show that the law of exclusion continued in force. The Mishna provided for the leper in the synagogue, where, before any other of the congregation entered, he was received on a raised platform, ten palms high and four cubits wide, which he did not leave till all the clean had departed.

Shorter terms of isolation are assigned in other cases of impurity.

1. Uncleanness till even followed contact with the carcase of any unclean animal; of a clean one which died of itself; (by analogy)

of a clean one which had been fatally torn ; with anything touched by an unclean person ; entrance into a house having a plague in its walls.

2. One discharged as clean in the case of a suspicious eruption, found, after seven days' seclusion, to be of minor importance, must wash the clothes before returning to society.

3. These must wash their clothes and be unclean till even : one having borne the carcase of any unclean animal ; of a clean one which had died of itself (or, by analogy, of one which had been fatally torn) ; one who ate or lay in a house itself having a plague ; the officer who gathered the ashes of the heifer for the water of separation.

4. These must wash clothes and person before returning to society : the liberator of the scapegoat ; the burner of the bullock and goat for the sin-offering on the Day of Atonement.

5. These must wash clothes and person, and be unclean till even: one having touched a person with diseased issue, or anything touched by the sufferer; one eating of what died of itself or was torn; the priest who prepared the ashes of the heifer; the officer who burned it.

6. One cured of a diseased issue must number seven clear consecutive days of absolute immunity, which by the nature of the case were days of isolation. The object is clearly stated by Jewish commentators to have been security against mistake or relapse, by which many might be defiled. The late sufferer was in this case held distinctly responsible for accuracy as to symptoms, an important suggestion as to social duty. The cure having been thus verified, the clothes and person must be washed, the person in running 'living' water, that is, water from a spring, well, or

river, not a cistern. The manifest tendency of this precept was to cause the acts of personal purification to be performed outside the city or town.

7. One having touched anything in a tent (house) with a corpse must remain secluded for seven days, but pass through an intermediate lustration on the third. On the seventh the clothes and person must be washed, the uncleanness lasting till even.

8. The restoration to society of the leper, after the cure had been established, was preceded by the shaving off of all hair, the washing of clothes and person. Then admitted to the 'camp,' but remaining under exclusion from family life for seven days; the leper on the seventh day repeated all these acts, and on the following day was formally restored to communion. To these contingencies of the peaceful life may be added the defilement

contracted in the Midianite campaign, Num. xxxi., involving seven days' seclusion under the conditions (3).

Except in the provisions of section 4, the moral force of which, as in a few other cases, was the association of the notions of sin and uncleanness, the degree of isolation and of necessary physical cleansing corresponds very closely to the comparative danger to health involved in the acts thus controlled or discouraged. Special attention is desirable to the provisions regarding the clothes, which under so many circumstances become vehicles of disease. The practical effect of the system of precautions was a watchful and scrupulous attention to the avoidance of casual defilements, and the developement in the race of personal habits which have for 1,800 years survived the overthrow of its national life.

CHAPTER VI

SANITARY INSPECTION

Periodical: Annual repair of wells and sewers.—Search for leaven.—Impure and feeble cattle.—Feast of Tabernacles.—Special: Code of signs for food test.—The *Shoghet* and the *Shomer*. — Accidental injuries. — Household utensils. — The house.—Textile fabrics.—Persons.

REFERENCE has been made to the repairs begun on the fifteenth of Adar. The wells were inspected, and stones which had fallen in removed, and the sewers examined and repaired; everything being done to facilitate safe and wholesome migration of persons travelling from all parts to Jerusalem for the Passover. And just as during the time when this feast was kept there the whole country was thus dealt with, so the scattered people,

among whom this rite remains in a real though modified form, have always and everywhere paid special and rigid attention to the law of Ex. xii. 19.

The search for leaven in order that it might be removed, constituted an annual sanitary inspection of the most exhaustive character ; and taking place at the most favourable time of year for thorough cleansing, this was and is a most powerful aid to the periodical restoration of healthy conditions, and their maintenance as far as possible throughout the year, in view of its recurrence. Leaven (sour dough, as formerly used), being putrefactive, was excluded from all sacrificial offerings. Similar obloquy attended it among the heathen Romans, for the same reason. 'Leaven is born from corruption, and corrupts the mass with which it is mixed.' This dictum has been confirmed by modern science. The religious duty of

removing it has always been in practice regarded as enforcing the most rigid scrutiny and cleansing of the whole residence, specially of walls to which it might adhere, crannies in which fermentation might exist, floors on which fermented liquor might have been spilled, and all vessels. The whole contents of every cupboard and other place of store, as well as furniture, bedding, &c., being cleared out and cleaned, and often the walls and ceiling distempered and the woodwork painted, a new sanitary lease of the premises is taken. Descriptions of this inspection have been given by various writers. Buxtorf and Leusden minutely detail the method of cleansing metallic utensils in a caldron of boiling water, so as to scald every part, without which they would not be accounted fit for use.

The inspection thus begun on the fifteenth of Adar and culminating at noon on the first

day of the Passover, was the most thorough of all. But fifteen days before each of the three great Levitical Feasts, an inspection of sheep and cattle took place for tithing purposes (Lev. xxvii.), in which observation was made for exclusion of the crossbred, the diseased, the injured, and the weak. That of cattle was usually before the Feast of Tabernacles.

The observances of this feast, about six months after the Passover, involved something of an inspection of furniture and utensils. The removal from the house into a booth, of which the construction and dimensions are Rabbini- cally stated, and the character of furniture prescribed, not only required considerable disturbance of the household, but acted as a sumptuary restriction, since the articles used must be of simple kind, scrupulous cleanliness being a matter of course. This change of habitation, with the happy open-air life, the

family meeting in the booth for at least two meals daily, commends itself to all who enjoy the refreshment of the simple change to a tent or summer-house, if only for a single meal, after the strain of work-a-day life. Occasional and special inspection was in some departments of very great frequency, in others rare.

In this and the remaining chapters it will be necessary sometimes to refer to previous statements. Such unavoidable repetition may, however, be of some value in bringing out several sides of the particulars, and showing their systematic harmony, as embodying the best principles of sanitary government.

With regard to the inspection of animals for food, the statement of qualifications constituting fitness for food was distinctly and rightly interpreted as a positive command to use the most careful inspection. Hence in the collation by Rambam of the 613 precepts of

the Torah we find this command stated in its several applications, 'to search diligently for the marks of' beasts, birds, fishes, and locusts, with, in the last case, the special note 'to know the clean from the unclean.' The information given is for general guidance, and is so clear as to enable an ordinary observer to avoid the unclean.

It is of some importance to bear this in mind. Plainly apparent signs are described as coming under broad classifications, without reference to scientific exactitude. 'Chewing the cud' is shown by certain movements, which the habitual acts of the non-ruminant animals mentioned with this term closely resemble. The description is thus in its general terms sufficient. If only one qualification were required, a more exact definition would have been sought. The inclusion of the bat among 'fowls' is only apparent; the word (*oph*) so

rendered meaning simply 'flying,' or 'winged' thing. In the identification of the clean, R. Levi says that under all circumstances two decisive marks must be unmistakably found. Some add that three are needed in the case of birds.

The inspection of slaughtered animals is exemplified most fully with regard to those killed for sacrifice, which must be without blemish. Lev. xxii. 21, 'It shall be perfect to be accepted.' Since, therefore, only the perfect could be used for the highest purposes, the effort to rear the best of every kind was stimulated. The rejection of the diseased from sacred use, and the impurity conveyed by that which had died of itself, led by degrees to the still existing regulations for both the methods of slaughter and the official inspection of the carcase. In the present day the slaughterer (*shoghet*), who is an officer of

the community, highly trained, and certified after severe examination, as in Talmudic days, is stringently bound, after killing the animal in the prescribed manner, to examine the viscera for any mark of disease; and on his report his colleague, the watcher (*shomer*), certifies the meat as clean (*kosher*) by a metal seal on each joint, without which no Jew may accept it for food. Every one familiar with the difficulties of the ordinary sanitary inspector, in guarding the public against the purchase of diseased meat, must recognize the superiority in this regard of the ancient Jewish practice thus still maintained.

The qualified permission regarding that which died of itself, or that which was torn, has long been disused. Its object appears to have been the supply of food in case of emergency, but under such conditions as would prevent improvidence and carelessness. The later form

of the law, Deut. xiv. 21, given after the national organization had advanced, entirely forbade the eating of the former by an Israelite, but permitted it to be given to a proselyte, who would come under the law as unclean, or sold to an alien ; either of whom might reasonably be considered as under emergency, and would receive it knowingly. In Ex. xxii. 31, that which was torn of beasts in the field is absolutely forbidden for food, and ordered to be cast to the dogs. Comparison of this with Lev. xvii. 15, shows no difference in the Hebrew word (*tereḥaphah*) rendered 'torn-of-beasts,' but the former passage has 'in the field.' The Talmudists distinguished between flesh actually torn by beasts, as in this case, and that torn similarly by accident, also that of an animal which had survived such injury ; noting eighteen classes of injury under this head. Rambam extended the list to seventy. Inspection was

made, in such a case, to determine if the injury was fatal.

In case of disease, if the animal lay motionless, inspection was needed to decide if it should be killed. This having been done, its fitness for food was, as in other cases, determined by inspection of the viscera. Food and drink were to be inspected in all cases of possible defilement. Seed for sowing was not polluted by contact, but if wetted, as for cooking, it became unclean by contact with a dead reptile.

The inspection of the household utensils was to be of a stringent and authoritative character, Lev. xi. 32-38. The close covered vessel with a tied or cemented lid, Num. xix. 15, which alone could pass inspection, as not defiling its contents, would not be used for ordinary liquids. Water, wine, and milk are named among seven liquids said to be covered by the word 'drink'

in the former passage, as liable to defilement, a dictum with which most sanitarians will agree. On oil the Rabbins are not in agreement, some thinking that its intervention would prevent polluting contact.

Inspection of a house. In a second reference to this subject, we have now to observe the completeness of the examination. The emptying of the house not only removes all possibility of a deceptive appearance, caused by some domestic or industrial process carried on in it, but indicates at once the seriousness of the conditions, and the occupier's responsibility for the proper state of his home. The first visit is confined to inspection, which includes measurement of the extent of the 'plague.' The second is accompanied by power of correction; if possible; but the case is kept on record, and a third visit must be paid for final condemnation, or for approval of the repairs.

The leprosy of textile materials may be considered here, as to some extent perhaps in the same connexion. Here again everything is done to avoid the necessity of destruction, three inspections being in one case ordered. The precepts in Lev. xiii. 49 seem to refer to fabrics already woven and to yarn ready for weaving in warp or woof. The affection here described has been regarded as probably a kind of mildew such as would naturally spread unless entirely removed. In the case of wool it might indicate carelessness in washing out its original alkali, which after the shearing injures the fibres, making them hard and brittle by a spreading fermentation. Flax, unless patiently and carefully prepared by steeping, retains impurities which rot the fibre, originally less tenacious in the warm climate of Palestine than here. In both cases, therefore, the value of the inspection as enforcing diligent skill,

and preventing the dirt inseparable from decay, is at once perceptible.

The inspection of persons is minutely defined, Lev. xiii., with the same care to prevent mistake and unnecessary loss or other suffering. It is clear that certain cutaneous diseases, as impetigo, resulting from unwholesome diet or uncleanly habits, some forms of herpes, leucoderma, or psoriasis, sometimes traceable to irregularity of life, present symptoms liable to be confounded with the early stages of elephantiasis. Under such circumstances a second and third inspection, at intervals of a week, were ordered. At least five original forms of disease are instanced, three of which have been approximately recognized by modern medical science as of a character to be relieved by the quietness and regularity of life for which the seclusion ordered would give the best opportunity.

CHAPTER VII

NOTIFICATION OF INFECTIOUS DISEASE AND OF INSANITARY CONDITIONS

Notification Schedule.—Penalty of concealment.—Degrees
of compulsion.

WITH regard to all diseases the symptoms of which in any way resemble those of the initial stages of leprosy, the person affected was brought to one of the priests for inspection. Careful reading of Lev. xiii. shows twenty-five various symptoms or combinations which render this compulsory. A valuable note is added by Canon Cook on verse 11, illustrating what is stated elsewhere by him on the false shame which often keeps back sufferers till the disease has advanced too far

for hope of successful treatment. The abruptness with which, in this case, without any period of seclusion, the person was dismissed as unclean, would have very much the same effect on the general public as the immediate shutting up by the Sanitary Authority of a shop or public resort in which a case of fever had been wilfully concealed. The character of the notification here mentioned is, like that of the present day, entirely separate from all question of medical treatment, which is not even suggested as any part of the duty of the priests, though tradition credits them with knowledge of the healing art. But in this connexion they acted simply as sanitary police, fully informed and authorized for diagnosis.

It may be here observed, that in the case of the leprosy in a garment, the notification is compulsory, a fact easily accounted for by the danger of direct wear of clothing in any way

polluted. In that of a house having a plague, the owner appears by the Authorized Version to have an option in the matter to notify or not, at his own risk. But in both instances Rambam notes that they cause pollution; and the Revised Version is much more probably correct in stating the notification as compulsory. This, the better rendering of the pointed Hebrew text, is supported by the Septuagint, Vulgate, and other versions. The expression here, 'it seemeth to me as it were a plague in the house,' clearly indicates, as it has been expounded among others by R. Levi ben Gershom, himself a medical man, a deference to the judgment of the qualified inspector.

CHAPTER VIII

DISINFECTION

Essential principle cleanliness.—Soluble and insoluble pollutions.—Purification by water and by fire.—Rotting and saturated walls.—Check of putrescence.—Animal charcoal.—Aromatic plants.

THE system of purification, personal and ceremonial, which runs through the whole of the Levitical law, indicates that the essence of the Jewish life in this regard was the principle of cleanliness. Nothing is suggested as to the use of chemical detergents. Natron ('nitre,' sesqui-carbonate of soda) was extensively used in Egypt for washing linen, &c. Jerome, who made the Holy Land his home for many years, writes of the 'soap' of Jer. ii. 22 as made

from a herb then abundant in marshy lands. Vatablus identifies this as *Radicula*, cudwort. Many such, possessing strong alkaline constituents, are indigenous, and were extensively used for such purpose in ancient times. There is no reason for doubting that these and others found in Egypt, as the *gilloo* (soap plant), some of which need only to be crushed for use, were known in the earliest days. But the copious use of water, and in special cases of spring water, went far to indicate the general principles of disinfection, which, according to many, work quite as effectively by dilution as by direct chemical agency.

The treatment of the textile fabric (Lev. xiii. 47), by (1) washing, to ascertain if the polluting stain consist of matter soluble, and therefore susceptible of dilution and expulsion; (2) tearing away the spotted part on evidence of a real but imperfect change caused by

washing; (3) the total destruction by fire of the hopelessly infected material, is an example of minutely patient care truly scientific.

The treatment of articles of various materials under circumstances of infection is also carefully provided for. The porous earthen jar, of little value, must be broken, when the fragments would naturally be thrown away in the open air. Wooden vessels, garments, skin or other bags, must be steeped in water for several hours. (Lev. xi. 32, xv. 12.)

In the case of spoil taken from the Midianites (Num. xxxi. 20-24), the directions given include cleansing of several classes of material defiled, specified as clothing, goods of animal fibre, and metals which could be purified by fire. On this Grotius notes, from Porphyry, two forces are credited with purifying power, fire by destroying, water by washing away. The reason for special purification here was a moral

one, the peculiar vileness of the Midianites having infected the chosen people, and therefore being dealt with ceremonially as a plague. With this may be compared the scouring and rinsing of the brazen vessel used for the sin offering. (Lev. vi. 28.)

The disinfection of the plagued house and its neighbourhood is very instructive. Certain stones noted as affected were to be separately removed, and the remaining parts of the walls scraped. The Hebrew word rendered 'scrape' (*qazah*), has the direct sense 'cut off,' and in all its applications, as in its Arabic equivalent, has a strongly decisive force, thus indicating the complete cutting away and removal of all mortar and plaster from the entire wall surface. The removal of the refuse stones and mortar, the fitting in of new stones, and the fresh plastering, constitute a thorough disinfection so far as the visible parts of the buildings

are concerned. But if a spreading mildew of the same kind recurred, there would be strong reason to suspect continuous corruption under the footings, drawn by capillary attraction through the walls, for which no remedy but that assigned is possible. The result would be the exposure of the evil, which must be corrected before fresh building on the same site. The materials removed to a distance from dwellings would rot in the open air and crumble into the soil.

The covering with dust or ashes of the blood poured out, whether in the open country by the hunter, by the lay slaughterer, or by the priest who daily removed the ashes, often saturated with blood, from the altar to a clean place, Lev. vi. 10, 11, xvii. 13, all indicate care exactly analogous to that now recommended in the disposal of putrescible matter. That the chemical constituents of blood are practically

identical in all respects with those of flesh, shows the value of this law on the sanitary side, while the excellence of the innoxious manure so compounded is well known.

In the ashes of the heifer, Num. xix., there may be a premonition of the use of animal charcoal as a disinfectant. The provision of its special use at an intermediate stage of purification from the worst form of tactual defilement, already referred to as on the third day, so giving time for and rest after the funeral cares, followed them so slowly as to maintain the sense of the great importance of this cleansing, completed in that case on the seventh day, the penalty for neglect being continued isolation, and that for disobedience forfeiture of civil and religious rights. The use of cedar-wood in this connexion may also be significant. Its oil was used by the Egyptians and Romans to preserve their documents. The fragrant

vapour of its burning was well known to the ancient world, and recognized as hostile to corruption. The reference is probably rather to the savin bush, a kindred plant abundant in the Holy Land, possessing the same qualities. Of hyssop too little is directly known with certainty to sanction more than a reference to the fact that nearly all plants suggested as identified with it have aromatic or detergent qualities.

CONCLUSION.

Two positions should be borne in mind in considering this whole subject. First, the religious obligation governing all the acts and conditions specified. The value of this, as enforcing upon a race recently elevated from a position almost of slavery such modes of life as would best sustain a free and civilized nation, was very great, considered merely from the temporal side, since it insured immediate and thorough application of principles which under other conditions are slowly developed through a long experience of mistakes, and are constantly opposed by inherited ignorance. It should not however be thought that the only purpose of this obligation was the ensuring of obedience for the preservation of mere physical

health. Throughout can be plainly perceived a defined connexion between moral and physical evil, so indicated as to convey deep spiritual teaching. Illustrations such as are found in Is. i. 5, 6, xxx. 26, and many passages of similar force, clearly refer to bodily disease as a type of sin, and further holy teachings as plainly show the direct effects of disobedience to Divine moral law in the generation of physical suffering. That the sins of the fathers are thus visited upon the children is most sadly shown in our own days, and the sacredness of the physical powers for right uses, dwelt upon as in 1 Cor. iii. 17 and parallel teachings, is absolutely confirmed by demographic observers.

Next, it must be seen that, as observed in the outset, the complications of modern life have added many sources of danger, for which in the majority of cases modern science has found partial remedies rather than full prophy-

lactics. To cure the ills caused by physical degradations extending over many centuries, and multiplied in phase by millions of instances, is a long and difficult task. Yet even on this side the task of the sanitarian is definitely aided by consideration of the means provided by the Divine wisdom for reducing the general susceptibility to disease among the people, and for stamping out sources of infection in the precious early days of their appearance. Here also it is conspicuously shown that in the practical life of a community revering the Fatherhood of God, the Mosaic system of sanitary law appealed to every man as his brother's keeper. And it is interesting and helpful to see that the broad outlines of such treatment as the latest investigations have shown to be the most effective, even under conditions so widely different in structure and detail, are clearly indicated in the sacred sanitary code of the Pentateuch.

LIST OF SCRIPTURE REFERENCES

<p>EXODUS.</p>		<p>xvii. 15.....75</p>	<p>2 KINGS.</p>
xii. 19 p. 68	xix. 2331	vii. 3, 1062	
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