

A GLIMPSE INTO BIBLICAL AND TALMUDIC MEDICINE*

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ce this subject is so vast, and so much has been written it, I shall limit my references to the Bible to that period covered by the Old Testament. As is well known, this is a book of law, history, hymns and prophetic utterances. The book consists of a book, the *Mishna*, a compendium of religious and civil law dating back to 200 B.C.E.,** and the *Gemara*, a series of discussions and disputations on the contents of the *Mishna*. The *Gemara* is in two parts—one edited in Palestine about 400 C.E.** and the other in Babylon about 600 C.E. The Talmud as a whole had many authors; about 3,000 are known by name.

THE BIBLE

In ancient times the *origin of disease* was attributed to Divine and supernatural forces, although the external and visible manifestations of diseases and their symptomatology were described very accurately. On the other hand internal diseases, the causes of which were not self-evident, were attributed to Divine agencies.

The Mosaic Code was no doubt influenced by the culture and legends of the neighbouring Mesopotamian countries and by experiences gained during the long period of captivity in Egypt. At that time Egypt was well advanced in the medical arts; this becomes evident from a study of the Ebers papyri. The papyri show that limbs had been amputated, bladder stones removed, cupping and venesection had been practised, and skulls had been trephined. Examination of mummies demonstrates the presence of gold fillings in teeth, and the use of artificial dentures. The use of 'therapeutic' preparations—one of the type still used by modern witchdoctors. The Israelites must have acquired a good deal of their medical knowledge from their Egyptian masters, but they discarded everything that savoured of witchcraft and this practice became punishable offence under the Mosaic Law.

The Laws of Moses constituted a landmark in the history of health and sanitation. The concept that healing was of Divine origin possibly accounted for the fact that this art was reserved for the priests. The lay practitioner hesitated to call himself a *rope cholim*, a healer of diseases; this may account for the fact that in the Old Testament names of physicians do not appear, nor does medicine appear as a distinct science or art.

Nevertheless, physicians are mentioned in a general sort of way, so are dressers of wounds, professional midwives, and compounders of drugs or pharmacists, but these references are merely scattered throughout the Bible. One of these concerns Jeremiah, who had a physician in attendance during his tenure of office as Viceroy of Egypt—'He commanded his servant physician to embalm the body of his father Jacob'.

Jeremiah, in his Lamentations, cried out: 'Is there no balm in Gilead, is there no physician there? Why then is not the death of the daughter of my people recovered?'

The implications of the various references is that the people of Israel, some 450 years before Hippocrates, had physicians who practised rational therapeutics.

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**B.C.E. = Before Christian era, C.E. = Christian era.

Some Diseases of the Bible

There are many references which come to mind. The Israelites were warned that if they went after other gods severe punishment would befall them: 'I will even appoint over you terror, consumption and the burning ague' (*Leviticus 26:16*).

In *Deuteronomy 28:21* it is stated: 'The Lord will smite you with the botch of Egypt (this is possibly a boil or pustular eruption) and with the emerods' (*ophalim* in Hebrew, meaning a swelling).

In *1 Samuel 5-6* 'the Philistines were smitten with *ophalim* in their secret parts'. This punishment followed on their capture of the Ark of the Covenant which they desecrated by placing it in one of their idol temples. The story goes on: 'This disease spread from city to city. The countryside swarmed with mice and rats'. We might therefore assume that the disease was bubonic plague and that they suffered from inguinal buboes.

Many other diseases are described—mostly skin affections—such as psoriasis, scab or scabies, leprosy, fungoid diseases, venereal disease, dysentery, dropsy, apoplexy, and mental diseases. The significance and danger of laryngeal diphtheria (*ascara*) was recognized, so much so that when this dread and fatal disease appeared the *shofar* or horn was blown to warn the people that the first death had occurred. Venesection was a mode of treatment, and lentils eaten once a month were supposed to be a prophylactic measure against this disease. There is an allusion to a disease, probably diabetes, in *Leviticus*, for which a limitation of carbohydrate intake was advised.

The famous expert Aldo Castellani, in his *Manual of Tropical Medicine* stated: 'No one can fail but be impressed by the careful hygienic precautions of the Mosaic period—the stringent quarantine rules very likely did a lot of good'.

Incidentally, if I may digress for a moment, the word *quarantine* has an interesting connection with the Mosaic sanitary code. In Italy in the 14th century, it was noticed during epidemics of plague that the mortality among Jews, although they lived cooped up in ghettos, was lower than among the rest of the population. It was concluded after much investigation that this was due to their observance of the laws prohibiting contact with dead bodies and to the laws of compulsory isolation. The authorities then adopted the code of 40-day isolation which is mentioned in *Leviticus*. The Italian for 'forty' is *quarante*—hence the origin of the word 'quarantine'.

Social and Preventive Medicine

In considering the question of social and preventive medicine we cannot but be tremendously impressed by what Garrison had to say: 'The chief glory of Biblical medicine lies in the institution of social medicine as a science'. In our modern times the duties of a medical officer of health are mainly concerned with the following:

1. Public cleanliness and the abatement of nuisances.
2. Disposal of sewage.
3. Control of infectious disease.
4. Health education of the public.

The principles enumerated above hardly differ from those laid down by the Mosaic Code (in *Leviticus*) and which Hume so aptly summarized as follows: 'Pure food, pure water, pure air, pure dwellings and pure bodies'. It is therefore understandable that Moses—apart from anything else he achieved—should be described by some authorities as the greatest sanitary engineer the world has ever seen.

According to the Biblical concept of medicine the priests were the guardians of the purity of the people, both physical and moral. For this reason it is understandable that the hygienic regulations assumed the character of religious precepts.

It is interesting to note that while Greek medicine in



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Biblical days developed the theory of the natural causation of disease, the Greeks were blind to the fact of contagion and to the concept of the direct transmission of disease.

In the Old Testament we have a description of the methodic inspection of a leper by the priest, who could isolate the individual temporarily or permanently after he had diagnosed the condition. He could also allow his return to society after finding definite evidence that a cure had been obtained.

The hygienic laws also included the question of food, and the prohibition of certain kinds of food. The best known of the prohibitions is the ban on the eating of the flesh of pigs. Even at that time it was recognized that the pig could harbour parasitic disease. The ban also embraces most of the carnivora, also certain kinds of fish, especially those without scales, since it was known that most poisonous fish have no scales. Shell-fish were also on the banned list, because it was known that they could produce gastro-intestinal upsets. Fruits and vegetables were not restricted at all, but certain kinds of birds and insects were forbidden.

There were regulations regarding the purity of the water supply; thus wells had to be covered and protected. There were also regulations which governed the disposal of sewage (*Deuteronomy*). Thus excreta had to be burned and buried outside military camps, and soldiers had to carry spades for that purpose.

Personal cleanliness led to the laws requiring ablution before partaking of food and the studying of the Bible. Contact with an unclean person or with a dead body rendered the individual unclean for 7 days. At the end of this period a bath had to be taken. Similarly, before entering the precincts of the Temple one had to be pure. Even the priests had to be free from certain blemishes (some 140 varieties are listed) before they could take part in Temple services. I need not enlarge on the strict laws governing chastity and morality.

Those suffering from venereal diseases like gonorrhoea were isolated: 'He who is affected by a urethral discharge is impure and everything he touches becomes impure. Whoever touches his couch or has contact with him must wash his clothing and take a bath and remains impure until evening. After the patient's discharge has ceased he must remain impure for 7 days and then have a ritual bath' (*Leviticus 15: 2-13*).

Woman's impurity during menstruation constituted an absolute bar to her performing any religious duties in the Temple, and there were also severe penalties against cohabitation during that period (*Leviticus 15: 25*). On the cessation of menstruation, a ritual bath had to be taken before a woman could be considered pure again. This custom has actually persisted to this day among the very orthodox of the Jewish community. Similarly, following childbirth a woman remained unclean for 7 days after the birth of a son, and 14 days after the birth of a daughter. This was followed by a further period of purification which lasted for 33 days in the case of a male and 66 days in the case of a female child. It would thus appear that the duration of the puerperium depended on the sex of the newborn!

It is evident that knowledge of anatomy and pathological anatomy was derived from animal dissection and inspection. The various organs and the pathological changes found there were accurately described. Dissection of the human body was prohibited since this was considered to be a violation of the dead. Any knowledge that was acquired was gained from external observation, and from the descriptions and studies derived from dissections on the human body performed in Egypt.

Therapeutics

Very little is known of actual therapeutics. Unguents of various kinds were used. As for drugs, there is mention among many others of balm of Gilead, myrrh, laudanum, mandragora, aloes, cinnamon, henna, etc., etc. You will probably remember that when King Hezekiah (*2 Kings 20: 7*) lay dying, Isaiah prescribed that a 'cake of figs' be applied to the boil or furuncle that was troubling him. Wounds were treated, and this is shown in this quotation in *Isaiah*: 'Your wounds have not been bound up, neither mollified with oil'. There is also the statement 'I have broken the arm of

Pharaoh, King of Egypt, and he has not been cured by the application of medicine or the application of splints to straighten it'. This passage demonstrates the type of treatment in vogue at that time.

Artificial Respiration

It is apparent that there is very little new under the sun. Modern trends in artificial respiration show the tendency to revert to the methods used by the prophet Elijah about 800 B.C.E. and copied by Elisha, who practised mouth-to-mouth breathing when he brought a child who was believed to be dead back to life again: 'And Elisha came into the house and behold the child was dead and laid upon his bed . . . And he went up and lay upon the child and put his mouth on the child's mouth and stretched himself upon him again. And the child sneezed 7 times and opened his eyes' (*2 Kings 5: 32-35*).

We also know that circumcision, opening of abscesses, stitching of wounds, and other minor surgical procedures were practised.

THE TALMUDIC EPOCH

Much more information is available covering the Talmudic period (about 900 years). There are no treatises or text-books on medicine from that period still extant, but 2 works are mentioned by name in the Talmud. One was called the *sefer refuot* (the 'book of healing') and the other the *megillat sammanim*; neither of these have been preserved.

The rabbis were keen students of comparative anatomy; this knowledge they had acquired from the dissection of slaughtered animals. A certain Rabbi Ishmael described the anatomy of human bodies he had seen dissected while in Egypt. The organs and the surface anatomy of the body were described with great accuracy.

The Physiological Processes

These were imperfectly understood. For example, some rabbis thought that the function of the liver was mainly psychical, and that it was the seat of anger. Bile was supposed to govern jealousy. On the other hand other authorities thought the liver was a blood-forming organ, and a similar function was attributed to the spleen. There was much speculation about the real function of the brain, and it was believed by some to be the site governing the mental processes. The role the kidneys played was not recognized and it baffled the rabbis completely.

Animal Pathology

There can be no doubt that the careful examination of the organs and tissues of slaughtered animals was initially designed to determine if the flesh of those animals was ritually fit for human consumption; this close study led to the concept of the pathology of disease. In more modern times, pathological anatomy first attracted attention during the 18th and 19th centuries—the Talmud therefore antedated this advance by some 15 centuries. In general terms the regulations stipulated that if the abnormal or pathological conditions found could cause the death of the animal within a stipulated period it was labelled *trepha*. In other words it was considered unfit for human consumption.

There were some 18 headings under which the carcass was condemned, the main ones being liver and lung abscesses, and perforation of internal organs and of the lungs. There was a guiding rule that if the lesion in the viscus did not penetrate to the surface, and if there were no visible naked-eye changes, the condition could not have been of immediate danger to the animal's life, and the lesion was not considered serious; the meat was therefore passed as fit for consumption.

Embryology

Embryology was a source of great interest to the Talmudic teachers. It was their belief that the embryo begins to assume the human form some 41 days after conception, and that sex differentiation only becomes evident towards the end of the fourth month. For fecundation they believed that only the 'essence of the seminal fluid was essential and not the fluid as a whole'; this theory seems to have anticipated the discovery of the spermatozoa by von Baer and Newport.

edity

problem of heredity received a good deal of attention. rabbis advocated judicious matings since they realized many of the congenital defects were transmissible; that reason they recommended that the family history of the bride should be investigated before marriage was performed. Further, the female relations were expected to look at the bride in the local bath house. Mental defectives were not allowed to marry. Acquired defects, however, were considered to be of much importance.

A very interesting case is quoted by Rabbi Ben Gamliel which is worth mentioning. This rabbi was consulted about a case of 2 sisters who between them had lost 4 children to uncontrollable haemorrhage following the rite of circumcision. He gave his opinion that this type of bleeding occurred in certain families who had an inherited blood condition which he described as a 'thin blood', and that this bleeding when it occurred was very difficult to control.

surgical Procedures

References to surgical procedures range from the treatment of surface wounds to the performance of laparotomy and hernia. The details and technique of circumcision are given. An operation was delayed if the baby was not fit, or if it was feverish or jaundiced.

There are many references in the Talmud to the following surgical procedures: limb amputations, setting of fractures, and the opening of abscesses (e.g. abscesses and carbuncles) by cruciate incisions. Abdominal wounds were also stitched up.

It is possible to carry out these surgical procedures, but large amounts of wine were given, and mandragora was used to induce narcosis.

Venesection was a popular procedure, but it was realized that its performance entailed some risk for the patient. A procedure following venesection was looked upon as a very serious application, and venesection was never performed while the patient was feverish.

OBSTETRICS AND GYNAECOLOGY IN THE TALMUD

Every subject received more than its fair share of attention compared with other specialties.

Uterine Haemorrhage

Uterine haemorrhage, especially the postmenopausal and intermenstrual varieties, was viewed with great concern and considered to be of serious import to the patient. Somehow it is not clear why it was considered a dangerous condition for the male partner as well. Uterine haemorrhage, when it occurred frequently, could lead to the husband seeking and obtaining an annulment of his marriage. Furthermore, the husband could be forced to submit himself for examination by a doctor.

A certain Rabbi Samuel, about 257 C.E., invented a hollow instrument very much like our modern Ferguson's speculum. This instrument was used by him to inspect the uterine walls and cervix; in this way he claimed he could determine the site and origin of the bleeding.

A popular prescription for uterine haemorrhage consisted of Alexandrian gum, alum and turmeric leaves ground up and made into a mixture with grape or palm wine. This mixture was supposed to have other therapeutic uses as well; it was supposed to cure anaemia and to possess contraceptive properties.

Pregnancy and Labour

It was recognized that the female pelvis was specially adapted for childbirth. Amenorrhoea was looked upon as the result of the conversion of blood by the breasts into milk. Although child marriages were not forbidden, the rabbis recognized that there were inherent and serious hazards for the child patient during labour. Under the circumstances contraceptive measures were allowed—usually an occlusive pessary was prescribed.

Prognosis of Pregnancy

This was considered impossible before the end of the third month. As a result of this, the law forbade a widow or a

divorcee to remarry before that period of time had elapsed. This law was designed to prevent litigation and disputes about the child's paternity.

Abortions

Their causation was attributed to injuries, frights, noxious smells or even psychical upsets. The products of conception were carefully examined and studied. Although hydatidiform moles were accurately described, their association with pregnancy was not realized.

Sex Determination

There was much speculation and theorizing about the factors which determined the sex of the child. A popular belief, also held by Aristotle and Galen, was that the right ovary was responsible for male children and the left for females.

The Conduct of Labour

Three midwives or wise women were usually in attendance. The patient was placed on a birth stool and supported on each side by one of the attendants; the third sat between the two and delivered the child. It was a common belief that labour pains were much more severe during the birth of a male child than a female child.

The placenta was studied and described. In cases of foetal asphyxia, where the child did not respond to the usual resuscitative methods of swinging its body, it was vigorously rubbed over with the placenta.

There is no doubt that the newborn baby received a good deal of care and attention; this can be inferred from the description of neglect given in *Ezekiel 16:4* which states: 'Thy navel was not cut, neither was thou washed with water to cleanse thee, thou was not salted at all, nor swaddled at all'. Salting was supposed to harden the skin, and swaddling was a means of keeping the limbs straight.

Breast Feeding

This was a prolonged affair and was carried on for a period of 18-36 months. The production of milk, as mentioned previously, was attributed to the conversion of the menstrual blood. Breast feeding was commenced on the 2nd day, before which the breast secretion was not considered nutritious enough. Where lactation was inadequate a wet nurse was employed, and when this was not possible the baby was fed on a mixture of goat's milk and honey water. However, every effort was made to stimulate the breasts; wine was considered to be a good galactagogue. This seems to be on a par with the use of stout, favoured by some doctors to this very day.

The stress laid on breast feeding can be illustrated by the following: if a woman became widowed while nursing her baby she was not allowed to remarry for a period varying from 18-36 months, lest she lose her milk on becoming pregnant again.

Obstetrical Difficulties

There were many references to obstetrical difficulties; the midwife usually sought the aid of the *rophe cholim* or doctor to help her in cases of obstructed labour. Destructive operations on the unborn child were performed because it was considered that the mother's survival was more important than that of the baby.

There is a Talmudic regulation which states that if a mother died while on the birth stool the *rophe* had to cut open the abdomen with a sharp knife and attempt to extract a living child. This procedure was permissible even on the Sabbath day. I think it is legitimate to assume that this postmortem operation could very well be the original caesarean section (the word 'caesarean' is probably derived from the Latin word *cadere*, to cut, and does not refer to Julius Caesar's mode of birth).

There are other references in the Talmud to abnormal births—a method is described and discussed where the baby 'comes forth from the wall of the abdomen' (*Niddah VII*). In this discussion the question arose as to what would be the legal rights of a first-born delivered in this way over a baby born *per vias naturales*. From this one must deduce that babies must have survived this abdominal delivery.

At a later period (C.E. 1105) the famous Rabbi and commentator, Rashi, gave it as his opinion that not only could a

living baby be extracted, but that the mother could also survive the operation.

STATUS AND PAYMENT OF DOCTORS

Registration of Doctors

Physicians were not permitted to practise without a sort of licence issued by the local court of justice (the *Beth Din*). There is no direct evidence of the existence of medical schools; apparently there must have been some form of apprenticeship. Every city was required to have at least one physician, and the public were advised not to settle in a city where medical services were not available.

It would appear that doctors taking an active interest in politics were frowned upon. Otherwise there would not have been the injunction to the public at large to avoid settling in a town where the local doctor happened to be its mayor as well. The underlying reason for this advice was the fear that the doctor-mayor would be too occupied with his civic duties to have much time to devote to his patients.

Fees

Physicians received comparatively high fees for their services. An aphorism current at that time was that a physician who did not charge much was not worth much. Once a patient agreed to pay a high fee this verbal agreement was valid

in law, and the doctor's remuneration was a matter of honour and obligation for the patient to meet. It was also held that experience and skill could not be evaluated or equated in terms of money. Apparently Medical Council regulations governing fees as we know them did not exist in those days.

CONCLUSION

It is appropriate that in concluding this address I should stress the high regard and esteem in which the doctor was held. The earliest and what is perhaps the noblest panegyric of the healing art appears in the Apocryphal Book of *Ecclesiasticus* (chap. 37) compiled by a Jerusalem notable, Joshua Ben Sirach, in the latter part of the 3rd century B.C.E.:

'The skill of the physician lifteth up his head so that he standeth in the presence of princes. God has created medicines out of the earth and let not men of discernment despise them. My son in sickness be not negligent. Pray unto God for he can heal. And also give a place to the physician and let him not be far from thee, for there is indeed need of him. For there is a time when success is in his power. He that sinneth against his master behaveth proudly towards the physician.'