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THE INFLUENCE OF PYTHAGORAS ON GREEK
MEDICINE

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THE sixth century before the Christian era will always be famous in the world's history for the great names of Buddha in India, Laotzü in China, and Pythagoras in Magna Græcia. But the sages of India and China were entirely religious teachers or philosophers, and to this very concentration of aim is due the fact that the religions of Buddhism and Taoism number their adherents by millions at the present day. Far different, however, is the case of Pythagoras, for it would be difficult nowadays to point to any 'Pythagoreans', even our vegetarian friends being inclined to trace their intellectual ancestry from the East rather than from the philosopher of Samos. Like Buddha and Laotzü, Pythagoras also was a religious teacher, who indicated a 'Way of Life', and founded a society which enjoined on its followers certain rites and ceremonies. Like other great religious teachers of mankind, with the exception of Mohammed, he has left no writings behind him; it would seem that oral communication, by reason of its greater spontaneity, is the channel best suited for the transmission of great religious conceptions. Personal intercourse and intimacy with a few chosen disciples who disseminate the doctrine is the characteristic note of all the great spiritual leaders of mankind. Inspiring as Pythagoras must undoubtedly have been as a religious teacher, he possessed, unlike the sages of the East, an insatiable intellectual curiosity, which distinguishes him as a true son of Hellas. Hence it is that he was also famous as a man of science who occupied himself with Mathematics, Acoustics, and the Laws of Music. Just as Thales of Miletus had taught that water was the ultimate origin and basis of all things, and as Anaximenes had held that the same was true of Air, so Pythagoras regarded 'Number' as the fundamental groundwork of the Universe. For he felt that ultimate Reality could not be found in Nature with her continual variability, but in something beyond the cognizance of the senses which should be

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expressive of the laws regulating the events of the world, and this he found in Number.

It is with this aspect of Pythagoras, namely as a man of science, and his influence on medicine that we are mainly concerned, though, even in this connexion, some consideration of his religious teaching cannot be omitted.

According to one tradition, Pythagoras (born at Samos, 562 B.C.) appears as a sort of glorified 'Medicine man' (γοητής), such as Epimenides had been, or Onomakritus, who introduced Orphicism into Attica. In his childhood and youth, we learn that Pythagoras, on account of his exceptional beauty, was the wonder of all the surrounding neighbourhood, and especially on account of his hair he was called κομήτης. After travelling extensively in Egypt, and even according to one tradition in India, at the age of 45 he came to settle in Magna Græcia, and took up his abode at Croton. His arrival at Croton created a great sensation, and has been compared to the appearance of Calvin at Geneva. Pythagoras sought out the best of the young nobles of Croton and other neighbouring cities, and taught them to live an ascetic life of temperance. Into the rule of the oligarchy he breathed a new and more ethereal spirit.

The selection of Croton, which was famous for its physicians, as the scene of his teaching is suggestive of Pythagoras having had some special interest in medicine, which he appears to have studied in Egypt. Certain medical ideas may be traced almost directly to the Pythagorean teaching. Thus the well-known doctrine of 'The Critical Days', which plays an important part in the writings of Hippocrates and Galen, seems clearly reminiscent of the importance attached to Numbers by Pythagoras. Celsus, indeed, writing on medicine in the early Roman empire, speaks of the Critical Days as the 'Pythagorici numeri'. According to his doctrine, Numbers possessed not merely complete Reality, but a higher Reality than the concrete objects from which they were derived. Number was a kind of fundamental principle into which the objective world was not merely dissolved by Thought, but from which it proceeded. Numerical existence is the only invariable existence, hence Things are the copies of Numbers.

The great significance assigned to Numbers by Pythagoras is found influencing the medical writings of Empedocles, who was the leader of the Sicilian school of medicine; thus he speaks of the foetus being formed in the womb on the thirty-sixth day and completed on the forty-ninth (τὸ γὰρ βρέφος δοκεῖ τελεωθῆναι ἐν ἑπτὰ ἑβδομασίαι), having probably been led to this speculation by the fact of these numbers being the squares of six and seven respectively. But to the number seven the Pythagoreans attached a special importance; it may be that their medical studies had taught them how that the milk teeth appear in the seventh month, that the second teeth come out in the seventh year, that puberty synchronizes with the fourteenth year, and that the beard begins to appear in the twenty-first year. Certain it is that the number seven

possessed a kind of mystical sanctity for the Pythagoreans; thus the seventh-month child was expected to live, but not the child born at the eighth month. Philolaus, the Pythagorean, identified this number with Health (Hygieia), and also compared it with the goddess Athena, who was a virgin and without a mother; thus the number seven alone of those up to twelve cannot give rise to another number or be divided by another number except unity (*παρθένος ἀμήτωρ—ἑβδομάς μόνῃ τῶν ἐν τὸς δεκάδους οὐ γινῆσθαι οὔτε γινῆσθαι ἐπ' ἄλλου ἀριθμοῦ πλὴν ὑπὸ μονάδος*).

One of the most distinguished physicians of Magna Græcia at this time was Alcmaeon, who was a young man during the old age of Pythagoras, and dedicated a book to him. Doubtless it was from Pythagoras that Alcmaeon derived the doctrine of 'Opposites', according to which the original opposites of the Limited and Unlimited brought forth a series of nine other pairs—the Odd and Even, the One and the Many, the Right and the Left, the Male and the Female, the Straight and the Crooked, the Light and the Dark, the Good and the Evil, the Square and the Oblong. Alcmaeon observed that most human things were two, i.e. man is made up of the Hot and the Cold, the Moist and the Dry. Disease was the 'Monarchy' of any one of these, while Health was a condition of 'Isonomy', or the establishment in the body of a free government with equal laws. From the same Pythagorean source Hippocrates derived his doctrine of the four Humours, and it was the proper mingling of these which constituted Health. Similarly, the Greek idea of the Soul being a Harmony seems to have originated from Pythagoras in connexion with medicine; thus Simmias, the Pythagorean, expresses himself in Plato as follows, 'Our body being, as it were, strung and held together by the warm and the cold, the dry and the moist, and things of that sort, our soul is a sort of temperament and attunement of these, when they are mingled with one another well and in due proportion. If then our soul is an attunement it is clear that when the body has been relaxed or strung up out of measure by diseases and other ills, the soul must necessarily perish at once.'

With regard to the actual medical practice of the Pythagoreans, it would seem that their principles of treatment were characterized by a great simplicity. To diet they attached special importance, and also to gymnastic exercises; they used poultices and salves very little, still less internal medicaments, and, least of all, the knife and cautery. To plants Pythagoras attributed magic virtues, and he made use of them in the treatment of disease. He considered that there was a close relation between plants and animals; he spoke of the seeds of plants as eggs, and their fructification as gestation. For the bite of a scorpion he advised wine flavoured with aniseed, and thought that aniseed held in the hand was very efficacious against epilepsy. He also praised 'mustard' as a penetrating remedy and useful for the bites of serpents and scorpions. In the writings of Epicharmus, a Pythagorean of the Sicilian school, we find the virtues of the cabbage extolled both as an internal and an external remedy. But the diet of the soul had to be considered no less

than that of the body, since the soul was the harmony of the body. For this purpose the Pythagoreans employed music, to which they attached the greatest importance, and they attempted to cure diseases by incantations, a belief in which is to be found in the writings of Plato; they were of opinion that music, if it was properly used, contributed greatly to health. Similarly, they employed select sentences of Homer and Hesiod for the amendment of souls.

This harmony of the soul and the body seems to have rested on a very finely adjusted balance, for the Pythagoreans were not permitted to indulge in the most innocent passions, such as effusions of joy, for fear of disturbing the harmony. According to the discipline of the Pythagorean brotherhood, every hour of the day was turned to good account, every duty was exactly determined. All their life was consecrated to keeping the forces of the body and soul in a continual harmony, and in avoiding the least infraction of the rules of the Order, and the least offence against the moral and physical régime which the master had prescribed.

We must now turn to the indirect influence of Pythagoras on medicine, that is to say, the influence of the religious teacher and preacher rather than that of the man of science. Whatever importance we may attach to the truth of his travels in India, where he studied Brahminical institutions, or in Babylon, where he learnt Arithmetic, or in Egypt, where he apprehended Theology and Geometry and is said to have been initiated into sundry mysteries, there is no doubt that in one aspect the teaching of Pythagoras implied the introduction of a new spirit which was not characteristically Hellenic.

The naïve insouciance of the Greek, combined with an astonishing keenness and freshness of intellect, has given to Hellenic literature its abiding and perennial charm. For the first time, and perhaps the last, the fresh mind of the child united with the intellect of a man confronted the profound problems of the Universe. Undistracted by the multitudinous mass of details which obstruct the vision of the modern philosopher, they were at least able to see life steadily, even if they did not see it whole. But beneath this surface clearness, freshness, and insouciance, there flowed an undercurrent of darker and more sombre thought, which we connect with Orphicism or the worship of Dionysos and the various mystic cults which existed in Greece, though in the time of classical Greece they formed but a subordinate feature of its life. Much of the attractive grace of Greek life and literature is due to the fact that important aspects of thought and feeling were omitted from it. Consequently, it was able to present a harmonious front to the world, being in fact at unity with itself, and it is this unity in its life which has exercised so powerful a spell over all future generations of mankind. The sense of disunion; the separation between the soul and the body; the sense of 'Sundering', 'Sünde', sin; the questioning about a future life, and the consequent comparative disregard of this one—all these

are ideas more commonly associated with the modern world, and often thought to take their origin from Christianity. It is a mistake, however, to suppose that Christianity was in any sense responsible for these ideas, because they had their beginnings at a date long anterior to Christianity in other religions of the East. Christianity came to bring healing and a message to the sin-sick soul, but Christianity did not introduce the sense of sin into the world. Whether these ideas were of purely Eastern origin, it is difficult to say, but certainly they are to be found in the Orphic mysteries which came from Thrace, and Pythagoreanism, though by no means the same as Orphicism, belongs to the same intellectual family.

Differing as the Orphics and Pythagoreans did in many respects, yet they had this in common, namely, 'The Fall of the Soul by Sin'. The Soul was of divine origin, and its earthly existence unworthy of it; the body was a fetter, a prison, a grave, only through atonement and purification could the soul return to the divine home whence it came; this was to be accomplished by the penalties of Hades and by the cycle of births. Both Orphics and Pythagoreans believed in the glaring contrast between earthly suffering and earthly imperfection on the one hand, and heavenly bliss and heavenly purity on the other. A single earthly existence was not enough to cleanse the soul from its original sin and to redeem it from defilement. All mystics endeavour by direct intercourse and gradual assimilation to obtain a final identification with God. The Pythagoreans identified Unity—the Principle of Good—with the Godhead, while Duality—the principle of Evil—was identified with the material world. The word 'Philosopher' is said to have been invented first by Pythagoras; there is a story that when in the Peloponnesus he made the following answer to Leontius: 'I have no Art, I am a Philosopher.' What does that mean? 'This life may be compared to the Olympic games, for, as in this assembly some seek glory and the crowns, some by the purchase or by the sale of merchandise seek gain, and others more noble than either go there neither for gain nor for applause, but solely to enjoy this wonderful spectacle and to see and know all that passes,—we, in the same manner, quit our country, which is Heaven, and come into the World, which is an assembly where many work for profit, many for gain, and where there are but few who, despising avarice and vanity, study nature. It is these last whom I call Philosophers; for as there is nothing more noble than to be a spectator without any personal interest, so in this life the contemplation and knowledge of nature are infinitely more honourable than any other application.'

Pythagoras was one of those rarely gifted men who combine the objective realism of the man of science with the religious fervour of the mystic. A similar instance may be seen in the case of Pascal, but here the scientific and mystical aspects of his nature were less happily blended, being marred by an essential morbidity of soul.

To the disciples of Pythagoras science meant a purification, a means

of escape from the wheel of life; for the greatest purification is disinterested science, and it is the man who devotes himself to that—the true philosopher—who has most effectually released himself from the cycle of births; in fact, the Pythagoreans at Thebes came eventually to use the word 'philosopher' in the special sense of a man who was seeking to find a way of release from the burden of this life. More precisely it may be said that the primary object of the Pythagorean Order was to secure for its own members a more adequate satisfaction of the religious instinct than that supplied by the state religion.

That there were distinct elements of Asceticism about the system of Pythagoras admits of no reasonable doubt, but, unlike the Eastern anchorites and monks of the Middle Ages, Pythagoras did not despise the body, but believed in the excellence of bodily vigour. His intellectual curiosity, however, did not lead him to study disease in great detail, for disease was the exception, which perhaps did not want much study; he was more interested in health as such, how it could be maintained, how in the words of a modern writer the body could become the quiet handmaid of the soul, or in Christian phraseology, 'The Temple of the Holy Ghost'.

Mystical speculations and intuitions can never in the realm of science bear the same positive fruit as the patient investigation of material phenomena; at the same time, such speculations serve to fertilize science, and, by bringing it into contact with the whole, prevent that too great isolation from life which is the danger to which science is specially liable. It is perhaps not the primary business of the physician to have a reasoned theory of life, and yet his activities must bear some relation to the thought of his age. The effect of the teaching of Pythagoras was to keep medicine in close connexion with the philosophic thought of the time. What claims our special interest is the combination of a mystical vein and ascetic practice with considerable scientific curiosity and attainments united with a belief in the excellence of bodily vigour. In a later age these two aspects of Pythagoreanism became disjoined and the Neo-Pythagoreanism appeared as a disfigured and distorted doctrine, as did also Neo-Platonism. Both resulted in a pure mysticism, with the consequent abandonment of all attempt to put the world upon a rational basis. Such an influence must always be inimical to medicine, the art of which consists in alleviating human pain and suffering by a rational comprehension of the nature of things. Neo-Pythagoreanism substituted fanciful speculation for a rational investigation into phenomena, without which medicine is incapable of progressing. Many echoes of Pythagorean doctrine may be found in Plato, and specially in the dialogue of the *Timæus*, which is put into the mouth of a Pythagorean; thus he says, 'He who instead of accepting his destiny endeavours to prolong his life by medicine is likely to multiply and magnify his diseases. Regimen and not medicine is the true cure when a man has time at his disposal.'

In the time of Cicero, the Pythagorean philosophy was revived with but little or none of its scientific tendencies and with more than its primitive religious and imaginative fanaticism. The first adherent of this Neo-Pythagorean school was a friend of Cicero, namely, P. Nigidius Figulus. This school borrowed both from the Peripatetics and Stoics. They certainly practised a severe asceticism, abstaining from flesh and wine and marriage; all oaths and animal offerings were forbidden, and they also practised community of goods. The Essenes, an ascetic sect of the Jews, to which John the Baptist belonged, appear to have been subject to Neo-Pythagorean influences.

Apollonius of Tyana, in the reign of the Emperor Titus, gave himself out as a second Pythagoras, and traversed the Roman world with the reputation of a wizard. The element of charlatanism which so readily clings to any system of belief which is prepared to dethrone reason, grew to a luxuriant rankness in the character of Apollonius. He appears, indeed, himself to have been sincere; certainly he practised the severe asceticism of the Pythagorean sect, wore pure linen, abstained from wine and flesh, observing the five years of silence, and making the temple his home. He felt a special attraction for the worship of Asclepius, which was then gaining an extraordinary vogue with its atmosphere of serenity and ritual purity and its dream oracles of beneficent healing. Apollonius, doubtless, scorned the popular conception of divination and magic, but believed that by crucifying the flesh and attenuating its powers, the spirit might lay itself open to heavenly influences. He considered that any sensible image of the Supreme which does not carry the Soul beyond the bounds of sense, defeats its purpose and is degrading to pure religion; pictured or sculptured forms are only aids to that mystic imagination, through which alone we can see God. Next to the knowledge of God, he preached the importance of self-knowledge and of lending an attentive ear to the voice of conscience.

There can be little doubt that the New Pythagoreanism, as represented by Apollonius of Tyana, was an essentially religious philosophy; its adherents reproduced the spirit of their founder in mathematical symbolism and in the ideal of asceticism, but the scientific insight which was so characteristic of the sage of Samos had entirely disappeared. Emphasis was rather laid upon an assumed faith in immortality, the conception of this life as only preparatory and secondary to a future life, the need of purgation and expiation for deeds done in the body, the doctrine of transmigration and successive lives, possibly in animal forms. Such a conception of life is seldom favourable to medicine or to science generally; for if this life be a burden and the body but a prison which shuts out the light of heaven from the immortal soul, then neither for the philosopher or the saint can any worthy end be attained by such a life being preserved or prolonged.

Consequently, many of the best minds of the early Empire were drawn away into mystical speculations and religious self-absorption, so

that little progress could be made with science, and when Galen appeared with his highly elaborated and philosophized system of medicine, which provided an answer for every question and a solution for every doubt, his teaching fell upon willing ears, and men were only too glad to have a decent excuse for giving up the toil of thinking. Of this they availed themselves in the realm of medicine for nearly 1,500 years.

Science and mysticism do not easily harmonize together. Occasionally a rare personality like Pythagoras exhibits this unusual combination, and may in his lifetime promote equal enthusiasm in either direction; but usually it survives for only a short time, and, as we see in the case of Pythagoras, after-generations were only attracted by the religious and mystical side of his teaching, which eventually sank into every form of intellectual obscurantism.