

ŞÂBAN ŞİFAÎ'S BOOK ON PEDIATRICS
WRITTEN IN 1699*

Hamdi Dilevurgun, M.D. **

The first Turkish treatise on pediatrics was written in 1699. It is called "The Book of Medical Measures for Children". It follows long after the first English work on pediatrics, "The Boke of Children" by Thomas Phaer or Phayre (1510-1560) which was written in 1545.¹ It deals not only with pediatrics proper, but with maternal and child health and the education of children as well. It is a pity that it has not yet been published and still remains in manuscript.

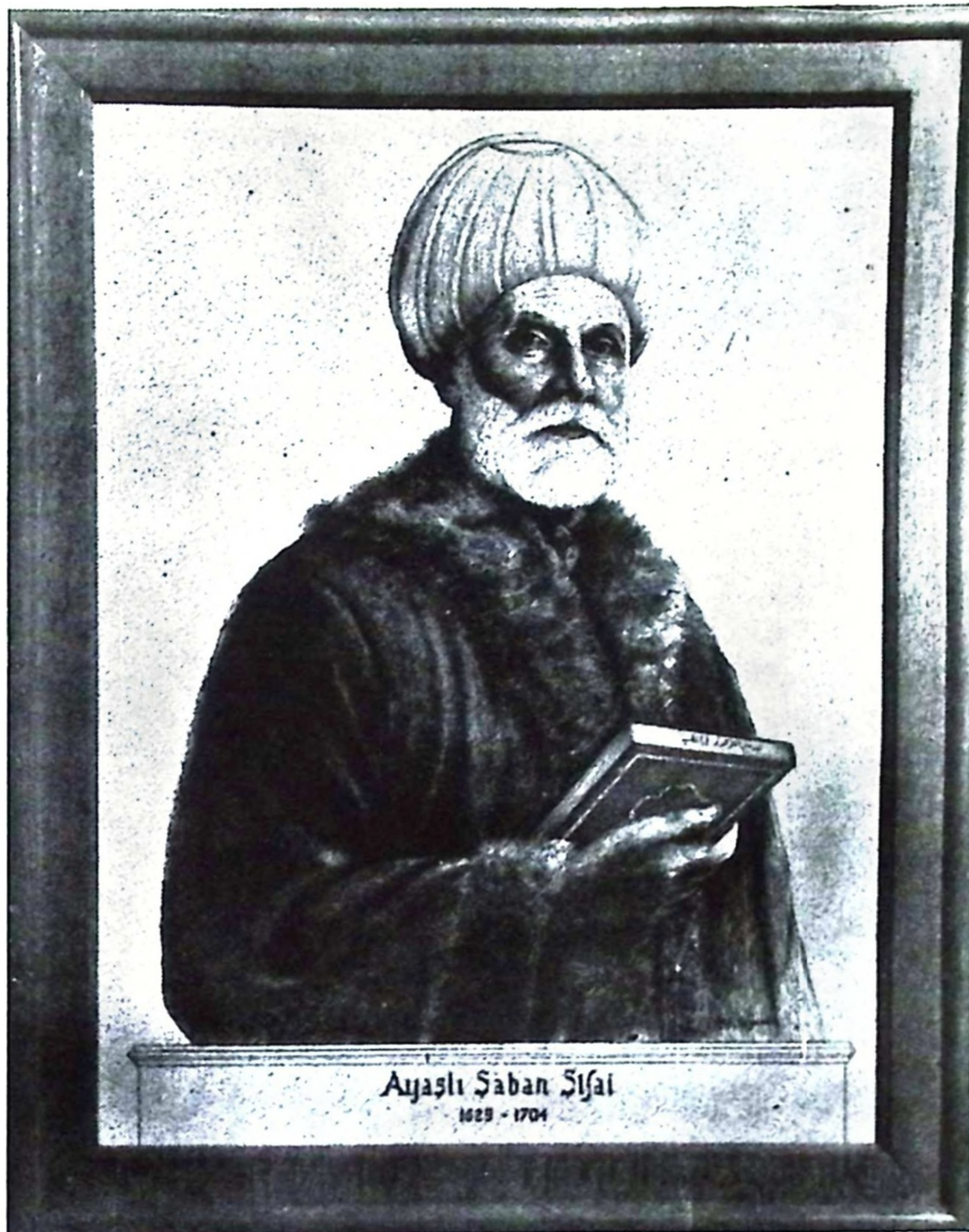
Its author was Şâban Şifâî — pronounced as Shâbân Shefâce — (1629-1704). Little is known of him, except that he was a learned physician and a professor at the Süleymaniye Medical School, Istanbul.² He was a contemporary of Sydenham, and translated the Latin word "laudanum" into Turkish as "laudable compound."³ However, it does not appear that he was influenced by his great European contemporaries in writing his treatise on pediatrics. He is rather following the precepts of famous old masters of Islamic medicine, as the late Dr. Adnan Adıvar pointed out.⁴ Today his name embellishes a medical department of the Research Institute of Child Health, Hacettepe, Ankara.

Şâban Şifâî's work is a treatise of 216 pages. However, as the obverse and reverse faces together have been counted as one page, the work has in reality double this number of pages.

Şâban Şifâî wrote merely to instruct the general public and especially mothers. But he showed the mentality and intelligence of a modern child health specialist by beginning his work with a discussion of prenatal care and ending it with a chapter, on the education of children, that may be looked upon as touching mental hygiene measures for the growing child. Nevertheless the content of the book is wholly out of date for today, for it is based upon the Hippocratic humoral pathology and Galenic physiology.

* From the History of Pediatrics Section of the Research Institute of Child Health, Hacettepe, Ankara.

** Head of the History of Pediatrics Section, Research Institute of Child Health.



Hippocrates, who flourished in the 5th century B.C., revolutionized medicine by discarding supernatural causes and replacing them by natural ones, and recommended a close observation of cases. However, the Hippocratic natural causes of disease operated through the four humors residing in the human body. The concept of four humors was adopted from the philosophy of the time which represented the positive sciences as well. It consisted in the dogma that all phenomena in the human body were ruled by four humors, namely blood, yellow

bile, phlegm, and black bile, the latter being an imaginary one. If the four humors were in balance, there was health. In the case of disturbance of this balance, disease appeared. It was then declared that one of the humors became "peccant".

The solid parts of the body were united with the humors by "pneuma", a kind of very subtle fire which represented life and breath.

When Galen arose in the second century A.D., and made his vast synthesis of medicine, adding his own contributions too, he approved the theory of the four humors and the pneuma. But he adopted the Aristotelian concept of three spirits in order to explain the physiological activity of the human body. The three spirits were the animal, vital, and natural spirits, residing, respectively in the brain, the heart, and the liver. All physiological functions of the body were in their charge. Aristotelian philosophy was a dogmatic system. It sought for purposes in all phenomena and explained their occurrence according to the purposes they served. As is well known, in our day science studies how a phenomenon occurs and in what ways it is related to preceding and succeeding phenomena. Because of its dogmatism, Galenic medicine was very far from modern scientific concepts. However, the concept of humoral pathology lasted until the middle of the 19th century.

When the Christian and Moslem religions appeared and gained power in the Middle Ages, science and philosophy were tolerated so far as they served the purposes of religion. At the time when Şâban Şifâî lived, the Ottoman Empire was still a mediaeval country from the standpoint of intellectual life. The medical sciences were studied and practiced according to the rules of Islamic medicine which was based on the Greek medicine of Hippocrates and Galen. If in a scientific field some concepts were opposed by religious doctrines they had to be rejected.

With these fundamental principles in mind we can now summarize very briefly Şâban Şifâî's book, as the space limitations of a journal do not permit us to give full abstracts of chapters.

In the preface, the author, after a short prayer, attributes to medicine the highest rank among other sciences, for the sciences are honored according to their subject, and the subject of medicine is

mankind, the most noble being in the universe. The prophet Muhammed also had conceded precedence, before theologians, to the scholars of the science of the human body. Beneficence and pleasure are the two main purposes of life, according to the sages. They are not fulfilled without health. Especially the purposes of procreation, and the worship of God for the salvation he has granted, are seldom possible with an unhealthy body. As the human being consists of mind and body, medicine, which provides for their health and vitality, should be considered higher than all other human achievements. Furthermore, medical science, giving knowledge about many mysteries which underlie the nature of living things, witnesses to the magnificence and unity of God. Such an outlook leads to blessedness, and the physician, guardian and practitioner of wisdom, is doubtless superior to other human beings. No physician, however skilful, can bring people to the term of longevity which was established formerly as 125 years. But, when observed, the laws of this noble art and science allow a healthy life subject to no other mischief than natural death. Medicine, which has proved so useful and necessary for mankind, is reputed to have been founded by Seth, son of Adam and Eve. However, Galen does not agree as to whether the origin of medicine can be precisely dated.

The author, after having established the importance of medicine, declares that since pediatrics had been discussed in rather abridged form in different chapters of Avicenna's Canon, he had decided to write a separate book on the subject, consulting the Canon and other works of fame. As children are more exposed to sickness than other groups of the population, such a book should be very useful. The work is intended to serve the general public, and as there is no indication of the existence of any other treatise on pediatrics by older authors, this must be considered the first one.

The last part of the preface is devoted to the praise of Sultan Mustafha II, Rami Mehmed Efendi, the Secretary of State, and to a summary of the contents of the book.

The first part deals with sex life and pregnancy. God has provided man and woman with the substance of generation for the perpetuation of the human race. In view of this purpose the temperament of woman is more cold and humid than that of man. This leads to the collection of blood in the female body which is called menses. In the case of conception, this blood, together with the semen of the part-

ners (sic), secures the formation of the embryo, for it is retained in the uterus during pregnancy and serves the embryo as plastic substance and food. Toward the end of pregnancy part of this blood ascends to the breasts and becomes milk; the other part, which is now unnecessary, is discharged after birth.

After fairly accurate observations on puberty and the age limits concerning pregnancy there is a short discussion about hermaphroditism. In the next chapter it is stated that God has granted pleasure and comfort in sexual intercourse to assure the perpetuation of human generation. In order to secure conception the semen of both partners should be ejaculated at the same time during intercourse, or that of the woman should precede the man's ejaculation. For this reason love play is necessary before actual intercourse. After a brief discussion the author recommends the face-to-face posture in sexual intercourse and discards the other ones. There follows a discussion on impotence in which the mechanism of erection is explained by pneuma and vapors arising from the semen and associated organs of the genital system. Psychic impotence is discussed correctly. A rather long discussion is devoted to the aphrodisiac drugs of the time.

Sterility and abortion are explained mostly by humoral influences on the uterus, except for congenital cases of sterility which are a consequence of divine decision. Deformity and the disproportion of male and female sex organs are discussed as a cause of sterility. For obese women the knee-chest position of intercourse is recommended as a way to secure conception. A test for female sterility is cited. It consists in the blowing of some odoriferous vapour into the vagina through a closed container. If it is scented by the woman, as a result of the internal diffusion of the smell to the nose, she is not sterile. Otherwise the uterus is closed and incapable of pregnancy. The author declares that sterile women, although subject to several diseases, do not look old when aged. Fertile ones early become old as a result of pregnancy and parturition.

After a chapter on the signs of pregnancy including a controversial consideration of the determination of the sex of the embryo, the conditions which simulate pregnancy are discussed.

There follows a discussion of the existence of semen in women which is interesting from the viewpoint of logical argument in scholasticism. At the end the author decides on the existence of female semen.

In an interesting chapter on spermatogenesis, different opinions on the subject are discussed. The author concludes, according to the authority of some theologians based on the Koran, that semen originates from the spinal cord and sternum.

The vital, animal and natural spirits are potentially included in semen. Their motion, subject to the divine decision, upon the unification of male and female semen in the uterus produces three pneumas. These pneumas create the heart, brain, and liver in the embryo and the three spirits take their places in these organs. Afterwards the body of the embryo is completed.

There follows a chapter on the determination of the body and mind characteristics of human beings according to their birth month, which is based on astrology.

At the end of this chapter the theological explanation of the mechanism of pregnancy also is related. According to this viewpoint, when the male semen is ejaculated into the uterus, the angel assigned to this particular uterus, picking up the seminal liquor, asks God whether or not it will serve for procreation. If the answer issued is positive, then the angel asks further information about the sex, the life span and other characteristics of the infant to be born, including its burial place. Afterwards the angel kneads the seminal liquor with the burial earth.

The following chapter deals with the membranes which surround the embryo.

In the next chapter the author discusses the sex of the embryo and its size, which are explained, according to the opinions of the day, from a rather mechanical viewpoint. At the end of this chapter the resemblance of children to their parents is discussed. The author recommends to both partners concentration on beautiful things during sexual intercourse. Many cases are cited to support this view. A Negro eunuch had mistakenly surprised an oriental king and his wife during intercourse. He was noticed only by the queen. She bore a child of black complexion. The daughter of a famous scholar of theology once bore a child with a human head and the body of a snake. She had a great fear of snakes, and during the intercourse which led to her pregnancy she had thought inadvertently about them.

After a short chapter on twins the author deals with the hygiene of pregnancy. Violent physical movements are forbidden and calmness is recommended during pregnancy. Otherwise abortion can follow. The avoidance of sexual intercourse also is recommended. Menorrhagic drugs and staying in the bath too long are forbidden. Purgation and bleeding also are contraindicated during pregnancy. However, there are some exceptions on this subject. Diarrhea is harmful, and some prescriptions against it are included. A fairly good diet is recommended. Prevention of the common cold, as a cause of abortion is emphasized. Pica and its treatment occupy a large place in this chapter.

The next chapter deals with the measures to be taken with women who have miscarried. In these cases the pain exceeds that of childbirth and sometimes there is bleeding too. The causes of abortion are explained according to the humoral pathology. Especially the phlegmatic humidity of the uterus is incriminated. If the breasts of a woman are moderate in size, in turgescence, and in softness her temperament also is healthy and there is no such humidity in her uterus. But during the pregnancy, if one of her breasts suddenly shrinks, she could have a miscarriage. The vapors which attack the uterus also cause abortion. As usual, the author includes several prescriptions for treatment, of which none are used today.

The causes of dystocia are classified according to deficiencies in the mother or the lack of skillfulness of the midwife.

Many drugs and prescriptions are included for the treatment of the woman in puerperium.

The next part deals with the care of the newborn. The cutting of the umbilical cord should be the first measure to be taken after birth. After the dressing of the umbilical stump, the baby should be sprinkled with salt. This is necessary for removing the residual excess of humidity from the maternal uterus. Some drugs may be added to the salt. Then the baby should be wrapped in the layette and next day should be bathed.

The care of the ears also is very important, for the end of the acoustic nerve is laid open to permit discrimination between voices.

The author, after having enumerated the religious duties concerning infants, deals with their rest and sleep. Slight rocking and nursery rhymes are recommended to cause infants to sleep.

In the next chapter the author emphasizes the advantages of breast feeding of infants by their mothers. The baby should be allowed to suck no more than two or three times daily, otherwise he suffers indigestion. Since digestion lasts at least 8 hours, nursing three times per twenty-four hours is indicated. Unfortunately mothers do not observe this rule.

If the baby is nourished by a wet-nurse, she should be healthy, vigorous, between 25 and 30 years of age and of good character. Furthermore she should have delivered only 45 days or 2 months previously. She should also be reputed as bringing forth male infants, because in this case her natural warmth will be greater. A great many prescriptions are included for increasing the milk of the nursing mother or wet-nurse.

When the baby awakens in the morning it is appropriate to let him lick a little bit of honey before suckling. The nipple also should

be first milked one or two times before being given to the mouth of the infant, for the milk staying in the nipple is not useful for infant food. When the child reaches two years of age, he should be weaned. A long discussion on the dentition and nutrition of children is included in this chapter.

The next chapter deals with diseases of the breast. The human mammary glands are situated in the breast in order to protect the heart. Another cause of this situation is the necessity of taking the baby on the lap for feeding him, during the puerperium, when the mother is unable to stand. The chapter includes a great many prescriptions for treating breast diseases.

The next part is devoted to child diseases. The object of medical science consists in the protection of health and in the reestablishment of health in case of its loss. Health, according to Avicenna, is a state in which the vital, animal, and natural activities are sound. Disease is the opposite of the state of health. Diseases are divided into two classes, single and compound diseases. Diseases affect all the body or a part of it. The former are called total (systemic in modern terminology) and the latter, partial diseases. The treatment of infantile diseases is effected either by treating the baby or his nursing mother or wet-nurse.

According to Hippocrates the affections peculiar to the newborn are pain in the mouth, vomiting, cough, sleeplessness, crying with fear, umbilical swelling and ear humidity. During dentition, pain in the gums, the fevers peculiar to this period, and diarrhea may appear. After dentition, swelling of the throat, dyspnea, calculus, intestinal worms, warts, or scrofula may be present. When the children reach the age of the appearance of pubic hair, in addition to the above mentioned diseases, the fevers of long duration attack them and their coldness tends to make them bleed.

The partial diseases of children are classified methodically from heads to foot.

After this introduction the author devotes nearly seventy double pages (pp. 93-162 in manuscript) to the diseases of children which may be related to any particular part of the body. These diseases, or sometimes only symptoms according to our point of view, are explained according to the humoral pathology. For instance epilepsy is classified as a partial disease peculiar to the head. Its cause is the temporary paralysis of the nerves which carry the vital spirit. This paralysis originates from the partial closing for a short time of the brain ventricles or the ducts of the nerves by vapors or by excessive humidity. However, some demonic influences also may play a part in the etiology of this disease, according to some religious deductions.

In order to treat infants with epileptic attacks, Avicenna recommended some hygienic measures concerning both the nursing mother or wet-nurse and the infant. The former should avoid the foods which produce thick and peccant milk; and before meals they should drink an infusion of squill of sagapenum. The mother or wet-nurse should avoid sexual intercourse and pregnancy, as these are very harmful for the epileptic infants in their charges.

The epileptic infant should be protected against the influence of loud-sounding musical instruments; he also should not be reprimanded. If he is old enough to eat, he should not be given fish nor the meat of older quadrupeds, but the meat of lamb and preferably chicken. Celery and fresh fruits are forbidden in the diet of little children, the first one especially favoring epilepsy. The infant or child also should not be bathed; he should be cleaned by rubbing. In order to remove phlegmatic peccant humour emetics and purgation are useful. The infant or child should have always on his body a pleasant smelling electuary too, as a preventive against epilepsy. Even the hanging of a ruby on the neck of a newborn, before he is bitten by a flea, is declared by an old author, strangely enough, as a lifelong preventive measure against epilepsy. Epilepsy is curable. The contrary Hippocratic statement should be interpreted as concerning only untreated cases, according to the authority of Ibni-Ebi Sadık.

I omit the other partial infantile diseases here, in order to discuss the total (systemic) ones. This part extends from page 162 to page 191 (double pages as a rule). It begins with fevers. Fever consists in a foreign warmth which, attacking human beings, appears in the inflamed putrid foci, from where it is transported to the heart, and thence through arteries is diffused to all parts of the body. It is harmful to all bodily activities. As the human body consists of organs, humors and spirits, fevers are classified according to which of these elements they first attack. Thus the fevers which affect first the spirits and afterwards the humors and organs are called quotidian fevers. Those which affect first the humors are called putrid fevers, and those which affect first the organs are called hectic fevers.

The cause of quotidian fevers resides outside the body and these fevers last, generally, one day. Putrid fever originates from body humors and is continous. Hectic fever strikes a fundamental organ and dries the body humidity.

The author discusses the etiology of fevers according to the concepts of humoral pathology and recommends many drugs, but strangely enough he does not include the cinchona bark.

As specific fevers, the author mentions smallpox and measles. The embryo is nourished by the menstrual blood retained in the uterus.

The menstrual blood produces an excess of humidity in the infant's blood. Human milk also is a product of menstrual blood. The excess of humidity should be removed from the infant's body by evaporation or by resorption. As the natural forces of the infant or child are not equal to such an end there is left only the boiling of blood. The natural temperature in children not being able to achieve this, foreign warmth also interferes. Smallpox and measles are the result of this action. Sometimes the boiling is caused by southern winds and pestilential air. For this reason smallpox and measles are contagious. After the customary bleeding, purgation, and emetics, the author mentions a great number of drugs for the treatment of these diseases. The complications of smallpox have been emphasized and several methods of treatment are given.

Several cutaneous disseminated manifestations, as well as scrofula, have been included in this part of the book.

The last chapter of this part has been devoted to plague. Plague is caused by the corruption of the air. When inspired the corrupted air affects the humors which are contained in the heart. These peccant humors corrupt, in their turn, other humors of the body. Then a very deadly fever arises. The putridity and corruption of the air are caused sometimes by nefarious influences of the stars. In this view the conjunction of Mars and Saturn is especially incriminated. The evaporations from ponds also may cause plague. Plague is common in animals too. Archimedes mentions an epidemic of plague in which only fleas were attacked, and infants remained unaffected.

The author after having discussed the clinical picture of plague gives, as usual, a great many prescriptions, not, however without mentioning their ineffectiveness.

The most efficient prophylactic measure against plague is to move to another city before corruption of the air takes place. The author recommends some drugs too, as preventive of plague, but they have no relation to modern immunization methods.

In the last part of the book the education of children up to and after puberty is discussed. The religious and moral aspects of education are emphasized. Resignation, self-denial, and other meritorious behaviour, and early marriage, are recommended.

The last chapter treats of death. Natural death is explained as a result of corrupted natural temperature.

REFERENCE

1. Guthrie, D.: *A History of Medicine*, 147, Thomas Nelson and Sons, London, 1946.
2. Ünver, A. S.: *Vakıflar Dergisi* (The Journal of Pious Foundations), 11: 204, 1942.
3. Uzluk, F. N.: *Professor of History of Medicine*, Ankara; personal communication.
4. Adivar, A.: *Osmanlı Türklerinde İlim* (Science Among the Ottoman Turks), 141, Maarif Matbaası, İstanbul, 1943.