# A Notable Philosophical Production of the Tadjik People: Ibn-Sina's Donish-Nameh

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# A NOTABLE PHILOSOPHICAL PRODUCTION OF THE TADJIK PEOPLE: IBN-SINA'S *DONISH-NAMEH**

Abu-Ali-Ibn-Sina, sometimes called Avicenna (980–1037), was one of the most brilliant figures of the culture of the East, a great philosopher and physician, natural scientist and mathematician, poet and philologist—a true encyclopedist of his time. Ibn-Sina's works were widely known in the Orient, and later in Europe as well. Extensive studies have been made of his writings, but up to the present no work has been devoted, either in Russian or any other language, to an analysis of Ibn-Sina's encyclopedic treatise, written in his native tongue and known under the titles of *Donish-Nameh* (*Book of Knowledge*), *Donish-Moye* (*Knowledge of Matter*), *Hakmeti-Alai* (*Philosophy for Alai*).

This book was written in the Dari language, the language in which the ancestors of today's Tadjiks wrote during the ninth and tenth centuries and which differs somewhat from present-day Tadjik.

The *Donish-Nameh* consists of two volumes; the first volume is devoted to logic and metaphysics, the second to physics, mathematics, astronomy, and music. Briefly, the history of the book and its publication is as follows: In 1891 the *Donish-Nameh* was printed at the Firuz press at Hydarabad. In 1937–38 the Iranian scholar Ahmed of Khorasan collected several manuscripts of the *Donish-Nameh* and published them at Teheran under the title *Donish-Namei-Alai*.[1]

Before proceeding to an analysis of Ibn-Sina's *Donish-Nameh* it may be useful to say a few words about his philosophy. Ibn-Sina held that the formation of the world was the result of a definite process, and the world took its actual form by going through a number of stages of evolution. It arises by way of emanation from the deity, is material in its essence, and no less eternal than God himself. In Ibn-Sina's conception God is abstract and inchoate. The origin of the world is due not to the divine will, but to an inevitable necessity; consequently, the world is as eternal as the absolute principle, or deity.

The Moslem clergy could not stomach Ibn-Sina's views, for the idea of the eternity of the material world contradicted the religious dogmas of the divine creation of the world. The reactionary philosophers of the end

* Translated from the Russian of *Voprosy Philosophii*, №3 (1948), pp. 358–366, by Henry F. Mins.

[1] The *Donish-Nameh* has not yet been translated into any European language. At present the author of this study, together with A. P. Kolpakov, is preparing a translation into Russian.

of the eleventh century and the beginning of the twelfth, in particular al-Gazali (1059–1111), fought fiercely against Ibn-Sina's views, and were actively supported by the government. The accounts that have come down to us tell how in 1160 in Bagdad a library was confiscated by the Chalif's orders, and Ibn-Sina's encyclopedia, which was found in it, was publicly burned.

Ibn-Sina was an original thinker of his epoch. Bourgeois philosophical tradition has come to treat Ibn-Sina, wrongly, as a mere commentator and popularizer of Aristotelian ideas in the Near East. Regel, for example, takes this view.

We can form a clear idea of the independence and originality of Ibn-Sina's thought from his *Donish-Nameh.*

## II

Ibn-Sina formulated a classification of the sciences. According to him, all the sciences are divided into the practical, which furnish guiding ideas in the realm of human behavior, and the theoretical, in which the research is carried on for the sake of knowledge itself.

The practical sciences, in turn, are divided into the science of the government of cities; the science of man's conduct with respect to his house, wife, children, and property, which the philosopher called the science of directing one's affairs; and the science of man himself.

The theoretical sciences are divided into the higher science, the intermediate science, and physics. Each of these three is divided into a group of pure, or primary, and a group of applied, or secondary, sciences.

For instance, Ibn-Sina refers to pure physics the sciences of matter, of form, of motion, the science of the primary bodies which make up the world, the science of the elements and their motions, the science of coming-into-being and passing-away, of astral influences and meteorology, of minerals, of substances, of plants, of animals, of the soul and its faculties in man and in the animals. Applied physics contains medicine, astrology, physiognomy, the interpretation of dreams, alchemy, and magic.

Four sciences enter into primary mathematics: arithmetic, geometry, astronomy, and music, to all of which there are corresponding applied sciences in secondary mathematics. Arithmetic, for example, is completed by the Indian calculation by sixties and by algebra; geometry by the measurement of surfaces, mechanics, the tractive force of weights, the construction of scales and weights, of graduated instruments, of optical instruments and mirrors. With astronomy there is associated the art of drawing up astronomical and geographical tables; with music, the construction of musical instruments; and so forth.

Ibn-Sina's classification of sciences is fundamentally materialistic. It

differs somewhat from the classification Aristotle gives, and shows that its author was capable not only of mastering the experience of his predecessors, but also of criticizing and amplifying it by his own observations. He systematized the material, found connections among phenomena, and made broad generalizations. However, Ibn-Sina succumbed to idealism in exaggerating the significance of the "first science" as the science of absolute being and contraposing it to the rest of the sciences which study that same being. His inclusion in applied theology of the sciences of revelation and recompense, of election and reprobation, of life beyond the grave, shows that Ibn-Sina accepts the existence of a world of ideas separate from the world of things.

Aristotle, we know, held that the "theoretical sciences" study being, and that their distinction therefore depends on the nature of the being studied by each science. "First philosophy," according to Aristotle, is the science of "motionless things." Things "which move but do not perish" are studied in mathematics, while physics is the science of "perishable things." What was presented above shows that Ibn-Sina's views on the classification of the sciences are not identical with those of Aristotle, and that in the domain of physics he supplements Aristotle's doctrine.

## III

Ibn-Sina recognized the reality of the external world. "Being," he says, "has no boundaries; it has no kin. . . . There is nothing which is more extensive than being; it has no contour, for there is nothing better known than it . . . it is that after which come all things."[2] It will be seen how strongly Ibn-Sina stresses the objectivity of being. Speaking of the existence of being, independently of us, Ibn-Sina describes its content as well. "Being," he says, "is intrinsically divided into substance and accident."[3] He stresses the prime importance of substance: ". . . the accident is not the basis of substance."[4] He divides substance into four elements: matter as the basis, having within it a fiery nature; form as the fiery truth and innate fire; the mixed element, e.g. fiery bodies; and finally the soul, which is separate from the body.

Like Aristotle, Ibn-Sina held that all the categories of being derive their importance from substance (which Aristotle called essence), the other categories being nonessential, transitory. In his *Donish-Nameh* he tried to show the objectivity of substance and stressed that the source of the existence of substance is to be sought in itself, since it is the essence of nature.

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[2] Ibn-Sina, *Donish-Nameh* (Teheran, 1937–38), p. 72.

[3] *Ibid.*

[4] *Ibid.*, p. 73.

Aristotle, we know, set form apart and considered it as alone capable of logical definition, abandoning a materialistic interpretation of "the first essence." Ibn-Sina however sets "constituent essence" as the rudiment of substance rather than giving form the first place.

All bodies, he says, consist of matter: ". . . there is no abstract corporeal form without matter."[5] Further on he develops the same thought: ". . . corporeal form is contained in matter itself, and the body is formed of this form and this matter."[6]

All this indicates that Ibn-Sina was not (at least when he wrote the *Donish-Nameh*) an adherent of the Neo-Platonic doctrine but an opponent of it. It is to be regretted that even in Soviet literature the incorrect opinion is current that Ibn-Sina tried to reconcile Aristotle's philosophy with Plato's.[7] Bourgeois Orientalists try to stress Ibn-Sina's idealistic tendencies, and even to find mystic propensities in his philosophy. Thus, Djemil Saliba comes to the conclusion that Ibn-Sina's entire system is pervaded by "a mystic force which is poured out over the world. In fact, mysticism lies at the basis of Avicenna's system. . . . This doctrine is mystic rationalism, or, more precisely, neo-Platonism, to which were added elements of mysticism of Oriental origin."[8]

This statement goes counter to the historical facts. Ibn-Sina did not recognize the existence of a "prime mover" in the sense in which we find it in Aristotle, but takes the interrelation of time and motion in a materialistic sense. "Time is conceived only in motion. Where there is no motion, there is no time," Ibn-Sina says in his *al-Nedjat*.[9] What is more, he defines time as the measure of various motions.

As we know, Aristotle toyed with the postulate of a motion inherent in nature, but finally rejected it, considering the so-called "unmoved mover," i.e. deity, as the source of motion. Ibn-Sina, proposing the hypothesis of a motion inherent in nature, a motion present in potential state, does not reduce the question of the origin of motion merely to an external impact of bodies or the action of one object on another. "Motion," he says, "is what is meant by the state of a body when it changes its state, starting from a tendency which is present in it; this is a transition from possibility to actuality, which takes place continuously, not merely by a single impact."

There is no occasion for a detailed exposition of Ibn-Sina's theological

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[5] *Ibid.*, p. 78.

[6] *Ibid.*

[7] Cf. T. I. Rainov, *Great Thinkers of Uzbekistan* (9th to 11th centuries), (Tashkent, 1943).

[8] Djemil Saliba, *Etude sur la metaphysique d'Avicenne* (Paris, 1926), p. 208.

[9] *al-Nedjat* (*Book of Salvation*), which is a short exposition of Ibn-Sina's capital work *al-Shefa* (*Book of Healing*).

utterances, which do not present great interest for the history of philosophy. Nevertheless one peculiarity of Ibn-Sina's doctrine should be pointed out, namely that he considered as possible the independent existence of both religion and of a philosophy based on the human reason. God, in Ibn-Sina's notion, is simple, one and perfect; he is pure reason, knowing itself, and from this self-knowledge there follows the knowledge of the world. Developing this thought, Ibn-Sina says: it is impossible that one and the same cause should produce more than a single effect. He therefore explains multiplicity by the intervention of the "prime reason." This, he says, is not absolutely simple; it contains in its essence formal and external elements; the latter in turn gives rise to the "second reason" and a potential element, which gives rise to souls and the spheres. Emanation is not only a means of knowing, but at the same time an act of the will, inasmuch as the "necessarily existing," i.e. God, consents that all should emanate from his essence. The mover of each sphere is a soul, which inspires its sphere to seek its good. The human soul, according to Ibn-Sina, is immortal, like the "necessarily existing."

Ibn-Sina's views are not too close to pantheism. He always tends to separate God from the world and to isolate him, to exclude all positive attributes from his essence, so as to leave him only mere existence.

Summing up, we can say that Ibn-Sina was not a consistent materialist. His doctrine was full of contradictions. By putting the "necessarily existing" to the forefront along with the "prime reason" which flows from it, and relegating nature to the background, Ibn-Sina gives way to idealism, which marked his entire philosophical system. We may presume that Ibn-Sina was indifferent to theology and the Shariat. We know from historical documents that the feudal aristocracy of Iran held a privileged position before the Arabs came, and that they therefore fought stubbornly against the Arab conquerors and Islamism, their religion. It is true that as Islam spread and entrenched itself in Iran the open warfare of the Iranian feudal aristocracy against Islam was replaced by the covert struggle of sects within Islam.

This does not mean to be sure that the intra-Islamic sects were the ultimate form and end-point of the Iranian aristocracy's struggle against the Arabs. It is well-known that certain sects within Islam reflected the struggle of the peasantry and the artisans against the feudatories and the overlordship of the Arabs. Themes of the struggle against feudalism found reflection in Ismailism, the sect to which Ibn-Sina's father belonged.

"My father was a thoroughgoing Ismailist. He often had discussions with my brother on the theme of 'the soul and the reason,' from the point of view of Ismailism," Ibn-Sina says in his biography. Ibn-Sina's voyage from Bokhara to Khorezm, which had close commercial relations with

other countries and where lived the remenants of the Madjus, who were not noted for their zealous Mohammedanism but contented themselves with an acquaintance with its rites; Ibn-Sina's trips from Khorezm to Jorjan to visit Kabus ibn-Vishmugir, an adherent of the Iranian tradition; finally his removal from Jorjan to Hamadan, with Shems Addaula, where Ibn-Sina was named vizir: all this to a certain extent serves to corroborate Ibn-Sina's anti-Islamic tendencies.

Ibn-Sina's materialistic theses were expressed with especial clarity not in the works he wrote in Arabic for the learned, but in these he wrote in his native Tadjik, i.e., in Dari. Any open attack on Islam would have been savagely repressed. It was for this reason, we may suppose, that Ibn-Sina expressed himself more openly in writings which were meant for a narrow circle, or for a part of his compatriots who stood in opposition to Islamism. At the end of his well-known epistle *On the Soul*, Ibn-Sina writes: "I laid them (the secrets) bare, in order to instruct my closest disciples. . . . But I forbid my friends and my disciples, those who accept my teachings, to make these doctrines known to men who are unripe and in revolt against religion, or to read them this epistle, or to keep it in any place which is not secure."[10]

## IV

Ibn-Sina was one of the first philosophers of the Moslem East to raise the question of the relation of body and spirit. He tried to eliminate the traditional dualistic conception by arriving at a certain unity of the two categories. To this end he set up an intermediate factor, the soul, which, though it is uniform in substance with spirit, is close to the body and is as it were the immediate mover of the body. Ibn-Sina was the first to give utterance to this thought, which is not found in any of the philosophers who preceded him. In his *Interpretation of Dreams*, in the chapter devoted to the organs of the human body, Ibn-Sina says: "Man consists of two substances, body and soul. With respect to the soul the body with all its organs is as it were an instrument which the soul uses for its various activities."[11] In another work, *al-Nedjat*, he says that the activity of animated bodies derives from forces associated with corporeality, and from the mixture of elements composing the body, that the soul is the basic complement of the natural body. There is perhaps no other point on which Ibn-Sina was so inconsistent.

In Ibn-Sina's doctrine, soul is a genus which has three species: vegetative, animal, and administrative or rational. The basic features of the three

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[10] Cited from E. E. Bertels, "Avicenna and Persian Literature," *Izcestiya Akad. Nauk SSSR*, Section of Social Sciences, №1–2 (1938), p. 79.

[11] Ibn-Sina, *Interpretation of Dreams* (Teheran 1935), p. 4.

sorts of soul form a progression from the unconscious vegetative vital force to the rational activity of man. Each of the species has its special properties. For example, the vegetative soul has the faculties of birth, growth, and nutrition. At the basis of the animal soul, in Ibn-Sina's view, lie the elementary faculties of the senses, on which are superposed faculties which restrain, group, and directly interpret the data of sense. The administrative, or, as Ibn-Sina called it, the "penetrative" soul, is also in turn divided into three powers: first, the motive force which sets the body in motion by means of a spirit which circulates from the brain to the nerves; second, the general force which evokes the activity of sight, hearing, touch, smell, and taste; and third, the power of reason, into which there enter fancy (imagination), memory, and thought.

Ibn-Sina studies the functions of the senses in detail, attaching great importance to them. Around visible bodies, he taught, there is a corporeal transparent medium, and when light falls through this medium on a body, the image of the latter is transmitted to the pupil of the eye by reflection and thus is perceived. He devotes the third treatise of his book *On the Soul* to this question. The first section of the book begins with the analysis of the terms "luminosity," "light," and "brilliance." "From the grammatical point of view," Ibn-Sina says, "there is almost no difference among the meanings of these terms, but we employ them as different concepts, very close to each other. One of them is the quality which is perceived by the eye in fire and the sun; the second is what shines from objects and is seen as light which falls on the object, and is then distinguished as white, black, and yellow."[12] He goes on: "Brilliance is present only in bodies (since we are dealing with objects), which have those radiations which we call luminosity, while we call that which comes from outside, light. Luminosity is present in fire and the sun, it denotes the essence of seeing (sight) by its very nature, for the reason that the solar disk (globe), which possesses this property (luminosity), always appears between the eye and the perceived objects."[13]

Ibn-Sina devotes his fourth treatise, the *Psychology*, to "internally perceptive powers." He says that the formative and the intellectual faculties, including opinion and memory, constitute the power of judgment.

The function of the formative faculty consists in the retention of the sensible form of the object after the sense object in question has ceased to act on the sense organs. The action of the objects of the external world may be interrupted, but the reflection of the sensed object, despite its temporary disappearance from the field of view, still leaves a trace, is fixed by the percipient and remains in memory. According to Ibn-Sina, imagination is

[12] Ibn-Sina, *Psychology* (1937–38), p. 76.
[13] *Ibid.*

the result of the reflection of real objects in man's consciousness. Here we see Ibn-Sina's materialistic approach to the study of psychical processes.

After the formative faculty there ensues the intellectual, which Ibn-Sina calls "the power of thought," or thinking. "The power of thought," he says, "distinguishes the good or the evil, the truth or the falsehood of the phenomenon imprinted on the fancy, and tries (tests) the utility or the disutility of what the fancy suggests."[14] Next comes the "power of memory." The property of memory, in our philosopher's view, consists in the reinforcement in consciousness and the discrimination of sensibly perceived objects from each other.

A noteworthy notion of Ibn-Sina is his hypothesis with respect to the interrelation and interconnection obtaining between these psychic processes. In the treatise, *Interpretation of Dreams*, he says: "The phenomena perceived by memory are received by the fancy and presented to thought. Thought has the duty of establishing the correctness or incorrectness of the impressed phenomena and leaves it in the memory, to return to it when it is needed."[15]

Ibn-Sina's recognition of the ordering of psychical processes, of the dependence of imagination and memory on thought and the controlling power exercised by thought—all this gives his theory a remarkably materialistic character. The stage of development which the science of the Middle Ages had reached could of course bring our scholar no further than the naively materilalist views which we have cited. "Phantasy can create the form of a man larger than an elephant or imagine a man with the head of a lion."[16] Everything can be represented by the imagination, he says, but sense can perceive only visible, sensible, perceptible phenomena.

Ibn-Sina divided reason into the practical and the theoretical. The practical reason possesses the motor ability which is proper to action, while the theoretical reason is characterized by the faculty of perception. Moreover, the reason, on Ibn-Sina's view, is divided in turn into a series of powers arranged by steps. Every power is present from the outset in the state of absolute potentiality: for example, the child's inherent possibility of learning to write. Ibn-Sina calls this power "material." Later this power ripens for activity, but the activity is not yet realized, for the lack of some tool or some bit of knowledge; such is the case with the child, who does not write because he has no pen. This second force, Ibn-Sina calls "possible." Finally, there is the third state of force, in which only will is lacking to action. Reason itself is characterized by the same three states. Its first state is the "material" reason, which has only the absolute possibility of

[14] Ibn-Sina, *Interpretation of Dreams* (Teheran, 1935), p. 6.
[15] *Ibid.*, p. 5.
[16] *Ibid.*, p. 6.

knowing; the second state of reason is comparatively more active; the third state, or degree, is complete readiness, when at any moment there may arise "super-sensible" forms on the basis of first truths. Ibn-Sina calls the third step "reason in action," although really it is only the highest stage of reason in potentiality, and it is precisely in this state that the understanding of the form of acutality is realized. Reason becomes that which should properly be called "actual reason." Above this capacity of reason Ibn-Sina placed a state proper only to a few, and calls this state of reason "blessed reason."

Ibn-Sina's idea of the disposition of the powers of reason in steps influenced the Spanish philosopher Juan Uarte, who in turn influenced Bacon, Descartes, Spinoza, and others. Uarte taught the existence of three forms of mind. First, mind which obeys easily but is incapable of the independent formation of new concepts and judgments. The second form of mind is the complete contrary of the first; it understands everything by its own efforts. The third form of mind is that which does not require instruction. Those who possess it give voice, according to Uarte, to keen and true conceptions, of which no one before them had the slightest idea. This is exalted mind.

Ibn-Sina held that sense perception serves as the basis for all the operations of the soul. However, the rational soul, being provided with the sensible in order that it may perceive the intelligible, departs further and further from the sensible, he says, and, in accord with its nature, approaches universal realities. It returns in ever-increasing measure to its essence, consequently it more and more frees itself from matter, in order to rise to purely mental judgments. In this hypothesis Ibn-Sina combines two views which are in direct contradiction. On the one hand he gives a correct, materialistic solution to the question by empirically recognizing the active role of the senses; on the other, he succumbs to idealism by divorcing the reason from its material substratum.

The "actual reason," in our opinion, is virtually identical with Plato's "world of ideas." Starting precisely from this idealist thesis, Ibn-Sina asserts the spirituality of the reasonable soul and its immortality. According to Ibn-Sina the immortality of the soul is the immediate consequence of its spirituality. The rational soul is not rooted in the body and is an independent spiritual substance, for which the body is but an instrument. In the *al-Nedjat* Ibn-Sina lists three forms of dependence for soul and body: equality in existence, subsequence, and antecedence. He elucidates them as follows: if body and soul are in substantial dependence, then each of them is essentially united to the other. Actually there are not two substances, but only one, which is unique; hence, this hypothesis is false. If this dependence is only temporary, and not essential, then one would not perish as a result

of the death of the other. If the dependence is one of subsequence in being, then the soul follows the body, and the body is the cause of the soul and of being. Finally there is the third form of dependence: the precedence of soul over body in time, the soul being the cause of the body's being. In this case it cannot be said that the soul depends on the body. But if the antecedence of the soul is included in its essence, that signifies that the subsequent essence follows necessarily from the antecedent essence. The absence of the subsequent phenomenon leads us to assert the absence of the antecedent. The consequent cannot be absent unless something previously failed to take place in the antecedent, which was the cause of the absence of the latter. Thus, the perishing of the body, according to Ibn-Sina, requires that from the very beginning there should have been an adequate cause leading to the perishing of the soul, as a result of which the body too passes away.

Ibn-Sina makes all this argumentation in order to prove the absence of any essential dependence of the soul on the body, and to assert that the soul does not perish with the death of the body. He goes on to conclude that the power of death applies only to complex things. In his opinion, souls are formed at the moment when bodies are born, the souls being subjected to a certain preparation before being inserted into the bodies they are to control. Ibn-Sina asserted that the interaction between soul and body takes place in the human brain. Thus, separating reason from soul, and making a mystery of man's ability to think, Ibn-Sina's position is one of idealistic rationalism.

The metaphysical and idealistic character of Ibn-Sina's theory of the soul appears in the fact that for him the soul is an active force, governing the body, while the body is passive, inert, trammeled. Ibn-Sina did not solve the psycho-physical problem any more than any other pre-Marxian philosopher could. The significance of Ibn-Sina's doctrine does not lie in its mystical traits, but in the materialistic elements of its world view. Ibn-Sina's materialism appears clearly in questions of natural science as a whole, and of medicine in particular. He upheld the principle of the eternality of matter; he proposed a theory of the connection between diseases of the brain and those of other organs.

His views with respect to the prevention and therapy of psychic illnesses have attracted the attention of many scientists by their originality. He worked on the psycho-physiology of sensations and the empirical laws of the sequence of images.

In his psychological practice Ibn-Sina attached great importance to the method of objective investigation. He stated that the emotions arouse changes in the entire organism: the heart and the blood vessels, the respiratory organs, and so forth. Ibn-Sina's psychological legacy is of great

interest, but unfortunately it has not yet been given the monograph it deserves.

The contradictoriness of Ibn-Sina's views is to be explained by the fact that he reflected in his works the struggle of two world views, materialism and idealism, and wavered between them. The social contradictions of the epoch of feudalism, in which he lived and worked, conditioned this inconsistency in his views. Although he endeavored to solve many philosophical problems materialistically, he still gave an idealistic answer to the fundamental question of philosophy. Nevertheless, he was by no means a reactionary and mystic, as bourgeois Orientalists assert.

The historical significance of Ibn-Sina's world views lies in the fact that he not only assimilated the achievements of Oriental and Greek science, but criticized and improved them, creating a system and summing up scientific activity up to and including the tenth century, in accordance with the demands of his epoch, in whose life he took an active part.

## V

Ibn-Sina was a teacher of logic in the Mohammedan East. That fact makes itself felt in his philosophical works. It is noticeable in his method, in his style, and even in his poetry, and comes through in his logical treatises.

In the *al-Nedjat* and the *Donish-Nameh* Ibn-Sina explains the aim of logic as follows. All knowledge and every science rest either on notions or on convictions. Notions, he says, have primary importance and are obtained by definition or a surrogate of it, while proof is obtained only by means of inference. Definition and inference are the two tools with whose help the known is obtained from the unknown. Ibn-Sina warns his reader, however, that each of these tools may be either correct, or not quite correct, or fallacious and seemingly correct, and consequently the deductions built on the basis of these premises may be either correct or not quite correct, fallacious.

Logic, says Ibn-Sina, gives man "a canonical rule, the observance of which preserves him from errors in inference."[17] According to Ibn-Sina, logic is a speculative art, which discloses the truth, establishes laws and preserves the man who observes those laws from errors.

In the *Donish-Nameh* he begins logic with an analysis of the concepts of the singular and the general. He divides concepts according to their extension ito particular and general. The extension of singular concepts is one object, e.g. "Zaid," a proper name. The extension of general concepts is a group of objects.

He goes on in the same work to say that any general concept is of the nature either of a genus or of a species. The concept "body," he says, is

[17] Ibn-Sina, *Donish-Nameh* (Teheran, 1937–38), p. 3.

more general than the concept "animal," and more particular than the concept "substance," while the concept "animal" is more general than the concept "man." Thus, according to Ibn-Sina, the concept with the wider extension is called a genus with respect to a concept with a smaller extension, which is included within its denotation and is called a species of it. Concepts with greater extension may also be called broader or more general concepts.

Ibn-Sina rigorously distinguishes definition from description. "Definition," he says, "aims at knowing the actual species of things."[18] It should show the essence of things, grasp their essential traits. Definition is necessarily complex in its content, since it has to show how the essential traits of a given object which it has in common with other things constitute its species, as well as the peculiarities of the thing which constitute its distinctness from other things. As long as the complex does not unite the general and the particular, its reality as a complex is incomplete, and always, when a thing has no complexity in its essence, it is impossible to point that thing out in language.

In the *al-Nedjat* Ibn-Sina maintains that definition and mark have something in common; things which have no mark have no definition. In the *Isharat* (*Book of Instructions*) he says that when a thing is known by its characteristic properties and its accidents, it is known by description too. The best description is that in which the genus is established, in order thereafter to sketch the essence of the thing. Various errors must be avoided in definition and description. A concept should not be defined by means of another concept which itself can be understood only by means of the concept to be defined. He points out that if we say, "The world is the motion of time," that is not a definition of the world, for the reason that the concept of world and of time remain unclear. He means to say that in the definition the term to be defined and the concepts which serve to define it should be distinct and independent concepts.

Moreover, a concept cannot be defined by means of a contrary concept which is equally undefined. Thus: "Black is the opposite of white." Here the concepts "black" and "white" remain undefined.

A definition should be clear. Something unknown cannot be rendered comprehensible by means of something still less known. If we say, "Fire is a body resembling the soul," we do not have a definition; the unknown concept is defined by a still less known concept.

A concept cannot be defined by another by means of which it is impossible to know that which is to be defined. E.g., "The sun is a star which shines by day." "Actually," says Ibn-Sina, "the day is the time when the

[18] *Ibid.*, p. 15.

sun has risen. Therefore, in the given instance the definitions both of 'sun' and of 'day' remain unclear."[19]

Ibn-Sina stresses the importance of the elements of definition in the analysis of propositions, and goes into detail as to the definitions of noun, verb, and particle. The proposition, he says, always deals with reality; it is either true or false. He sets up three groups of propositions. In the first he includes categorical propositions; in the second, the hypothetical-conjunctive; and in the third, the hypothetical-disjunctive judgments. The specific quality of the categorical judgment, according to Ibn-Sina, consists in the assertion or negation.

In addition to the three classes of propositions just named, Ibn-Sina also distinguishes universal and particular judgments, affirmative or negative, and names the four sorts: universal affirmative, etc.

The relation of the predicate to the subject in propositions, according to Ibn-Sina, can be thought of as necessary, or as possible, or as "forbidden." The truth is not to be discovered by the mere combination of concepts in propositions; Ibn-Sina mocks at such pseudo-scientific methods of discovery.

Ibn-Sina develops a moderate, simple, and solid theory of the syllogism. The rules for the construction of the syllogism which are given in the *Donish-Nameh* may be found in the works of Mill and Monto, Vvedensky or Chelpanov. We do not mean to say that these logicians copied Ibn-Sina; but the fact remains that the rules for constructing the syllogism given in the eighteenth to twentieth centuries do not differ from the rule set forth by the author of the *Donish-Nameh* at the beginning of the eleventh.

In the *Donish-Nameh* Ibn-Sina repeats literally Aristotle's doctrine of the three figures of the syllogism. It is interesting that the fourth figure, which was introduced in the second century, is not even mentioned in the *Donish-Nameh.* It may be conjectured that in view of the artificial nature of the Galenian figure Ibn-Sina attached no great importance to it. According to Ibn-Sina, the first and the second figures have four modes each, and the third figure has six modes. He gives great importance to the modes of the first figure and in the *Donish-Nameh* gives ways for reducing the figures of the syllogism, crediting to himself one of the methods of reduction. Its procedure recalls the method of *reductio ad absurdum* familiar in the Latin literature.

At first sight Ibn-Sina's theory of the syllogism seems formalistic, but a closer study will convince one that this is not altogether so. According to his doctrine, within the syllogism there should be repeated in generalized form the real connections of being, and hence all the forms of inference should reflect actuality in their premises. In this respect Ibn-Sina goes beyond and completes Aristotle's theory of inference.

[19] Ibn-Sina, *Donish-Nameh* (Teheran, 1937-38), p. 17.

In Logic Ibn-Sina studies not only those fields in which the formal criterion of truth is applied, but also works in those domains of science in which the material criterion of the truth of thought finds application. Speaking of the truth of the premises of a syllogism, he specifies what factors should serve as the criterion of the correctness of an inference. "Many syllogisms occur," he says, "whose premises rest on opinions, and not on fact."[20]

According to Ibn-Sina there are thirteen factors which are prerequisites of inference: first principles, sensation, practice (experience), prevalent opinions, imaginary opinions (illusions), seeming truth, approbation, axioms, analogies, external known things, assumption, phantasy, and those premises which occur in the inference. Of these prerequisites, the first principles, sensation, and prevalent opinions constitute, according to Ibn-Sina, the basis for probative inference. Axioms and external known things are the prerequisite of dialectical inference.[21] Illusion and analogy form the basis for the erroneous, sophistical syllogism. Approbation, assumption, and external known things constitute the basis for the rhetorical inference. Finally, phantasy, according to Ibn-Sina, is the basis of the poetical inference.[22]

Of all the types of syllogism, says Ibn-Sina, "we are interested only in the probative syllogism in order to use (apply) it, and in the sophistical syllogism, in order to avoid error."[23]

## VI

Aristotle's logic, in his time, furthered scientific discovery, inasmuch as Aristotle generalized the scientific experience of Hellas, first stated the laws and forms of correct logical thought, and linked them with other fields of knowledge. Ibn-Sina thoroughly made his own the progressive side of Aristotle's teachings, and was an apostle of Greek philosophy at a period when philosophy in Europe was the handmaid of theology and when Aristotelian logic, by means of a suitable revision of the *Organon*, had been turned into scholasticism, when "clerical obscurantism," as Lenin said, "killed what was vital in Aristotle in order to perpetuate what was dead."[24]

Ibn-Sina rendered great services in logic. At the same time that he disseminated Aristotle's logical doctrines, he sought to derive logical forms and relations from the specific qualities of existence. In Ibn-Sina's

[20] *Ibid.*, p. 47.

[21] "Dialectic" in the medieval sense of the term has nothing in common with materialistic dialectic. Scholastic logic or "dialectic" was a purely formal art of disputation and argumentation.

[22] *Donish-Nameh*, p. 56.

[23] *Ibid.*

[24] Lenin, *Philosophical Notebooks* (Moscow, 1947), p. 303.

logical works the theory of judgments and their transformation from one form to another is clearly worked out. However, he did not succeed in finding the historical and systematic interconnection of the forms of judgment and the test of their value by the entire experience of scientific development. Summarily, we may say that this was a task that philosophy before Marx did not cope with.

In Ibn-Sina we see clearly the conflict of materialism and idealism, of progressive and reactionary trends. Many of the important propositions established by Ibn-Sina constituted progressive influences in the subsequent course of science.

At the present time, when the history of the philosophy of the peoples of the USSR is being written, a study of the philosophical heritage of our Tadjik scholars becomes a timely question. With that purpose in mind, we have tried to acquaint the reader with the *Donish-Nameh*, the work of an outstanding philosopher of the Middle Ages, a man whose historical role in the development of philosophy cannot be forgotten.

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