VASYL YAKOVYCH DANYLEVSKYI'S LECTURE ON THE DOCTOR, THE PATIENT, AND THE SUCCESSES OF MEDICINE (1921): ANNOTATED TRANSLATION

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ABSTRACT

Unlike a mechanic, in front of a doctor there is a human being with all the manifestations of the feelings, with a painful soul, with aggravated egoistic intentions. The public easily forgives great failures and blunders of a quack but not a doctor. The doctor's duty is to forget about his personal troubles for the sake of his weak patient and to instill in him cheerfulness, spiritual fortitude, and optimistic expectations. In functional nervous disorders, the doctor can limit himself to psychotherapy only. A family doctor deserves greater respect and trust. A profound knowledge of all medicine is absolutely necessary for any specialized doctor. The doctor is obliged to serve public health – to supervise schools, factories, markets, railways, etc. The success of scientific medicine is not always known to the low-cultural public due to their insufficient popularization by the doctors. However, over the past 50 years, scientific medicine and medical practice have made tremendous progress: local and general anesthesia for operations, antisepsis and asepsis have been applied in surgery, organ transplant operations have been performed, vaccinations against cholera and bubonic plague in humans have been introduced, a new science – medical bacteriology has been founded, a successful fight against epidemic contagious diseases has been carried out, diagnostic reactions to typhoid fever, syphilis, Pasteur institutes have been established; fluoroscopy, chemotherapy are carried out, salvarsan has been invented to treat syphilis and relapsing fever; the therapeutic use of light rays and electrotherapy has begun; study of immunity, innate and acquired, anaphylaxis, study of immunity both innate and acquired, anaphylaxis, scientific psychiatry and psychotherapy is being developed, etc.

Keywords: *patient, social hygiene, superstitions, scientific discoveries.*

Medicus "in serviendo aliis consumor"
Nicolaes Tulp (1593–1674)

Introduction

Academy member Vasyl Yakovych Danylevskyi (1852–1939, *Fig.*) was an outstanding multifaceted scientist (biologist, physiologist, protozoologist), one of the founders of biophysics and physiotherapy, as well as one of the predecessors of psychoanalysis [1]. For many years he was delivering introductory lectures at the Faculty of Medicine of Kharkiv University and at the Medical Institute for Women organized under his leadership. These lectures were intended to prepare the medical students to mastering the profession. In 1921, Danylevskyi V.Ya. published the book "Doctor, His Vocation and Education. Introductory Readings" [2]. In the scientific journals of Kharkiv National Medical University, we have already presented the first two lectures from this book: the first one on science, the university and the choice of the faculty [3]; and the second one about health and disease [4]. In the third introductory lecture of Danylevskyi V.Ya. on the relationship between the doctor and the patient [5], the deontological position of the scientist runs like a golden thread. According to the evolutionary theory

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of Spencer G. [6] and his own works on personal and social psychohygiene, he explained to the students a natural decrease in the activity of "later life acquisitions of the human brain, and therefore less stable functions of mind and morality" in favor of survival. Thus, a talented teacher at the very beginning of the physiology course was forming a scientifically based tolerance to the "temporary predominance of primary, more strengthened feelings, inclinations and instincts, above all – in the form of an expressive increase in selfishness, rigidity and complexities of character, mood" in a sick person. That is, one of the most important adaptive reactions of the body was offered to the attention of the audience: a decrease in elated feelings, spiritual and intellectual activity under adverse conditions, for example, in diseases.

Fig. Vasyl Yakovych Danylevskyi, 1980

In the second part of the lecture, Danylevskyi V.Ya. fascinated the students with colossal scientific discoveries of medicine in the second half of the 19th century, which are still relevant today [7; 8]. Here it is appropriate to recall the world discoveries of this scientist, our great compatriot.

Even in his student years, Vasyl Danylevskyi received a gold medal for scientific work in the physiological laboratory of Professor Schelkov I.P. "On the decay of nitrogenous substances during muscular activity" (1872).

In his doctoral dissertation "Research on the physiology of the brain", Danylevskyi V.Ya. for the first time in the world, outlined the findings of the study on the electrical activity of the brain in dogs. He discovered spontaneous brain potentials, as well as their change due to various stimuli. Thus, Danylevskyi V.Ya. the first among domestic physiologists recorded an electroencephalogram in 1875 (independently of the English doctor Caton R., who in the same year presented the results on brain currents registration in rabbits and monkeys).

Danylevskyi V.Ya. was the first to reveal that heat production occurs in the muscles, which was described in the work "Thermophysiological studies of the muscles" (1879).

Danylevskyi V.Ya. was also behind the development of physiotherapy, studying the effect of remote electricity on the organisms, which was presented in his "Studies on the physiological process of electricity at a distance" (1900, 1901).

The discovery of Danylevskyi V.Ya., especially significant for the mankind, took place in the field of protozoology: it was the discovery of general patterns for malaria parasites of humans and birds, namely the relationship of the cyclic character of the disease and schizogony, the development of the parasites outside the peripheral blood (spleen, bone marrow), the existence of acute and latent forms of infection, the occurrence of relapses, etc. He developed the technique of capillary cultures, cultivation of blood parasites in an invertebrate host. Subsequently, the effect of thousands of antimalarial chemotherapeutic drugs was studied in similar experimental bird model. For his work in the field of protozoology, Danylevskyi V.Ya. received a prize of 2500 francs from the French Academy of Sciences "for the most useful work for French society" ("en prix dans le concours Montyon (Medecine et Chirurgie) de l'année 1889").

In the pre-revolutionary times, Vasyl Danylevskyi was also awarded a gold medal from the Imperial Society of Lovers of Natural Science (1891), a Small Prize named after von Baer K.E. from the Imperial Academy of Sciences (1894, 500 rubles), a prize named after Adam Chojnacki from the University of Warsaw (1900, 900 rubles), a prize named after surgeon Yunashev N.Z. from Imperial Military Medical Academy (1902, 3500 rubles).

After the October Revolution, Danylevskyi V.Ya. was engaged in development of issues of organizing labor and recreation for workers. In 2022 Vasyl Danylevskyi initiated the creation of Ukrainian Institute of Occupational Health, in which he worked as the head of the department of labor physiology. The following publications of the scientist featured physiology of work and rest: "Intelligent Entertainments and Their Scientific Substantiation" (1915), "Work and Rest" (1921), "Work

and Life" (1921), "Physiology of Work: Popular Essays" (1927).

In the same years, Vasyl Danylevskyi gained scientific interest in organ preparations, taking into account the well-known doctrine of Hippocrates about the "healing forces of the organism inherent in living beings". Thanks to his invention of the method of alcohol-water extraction of tissue preparations, for the first time in the world, it became possible to begin their widespread production (first Spermol, a testicular extraction from the testes of cattle). Within the period the 1920s–1930s, under the leadership of Danylevskyi V.Ya., his cherished dream of creating a large research center with a powerful department for production of organ preparations, in particular crystalline and synthetic, was realized. Among the wide range of drugs (more than 20 drugs in just the first 5 years of the institute existence), Danylevskyi V.Ya. paid much attention to the study of lecithin (according to his formulation, the institute produced Phosphren, a drug containing lecithin). In the 1930s, the social hygiene and prevention sector with the department of health education and the information and advisory bureau, where health issues were addressed, began to work as a part of the institute. As we can see from the lecture, it was also an old dream of the scientist. His idea of the unity of theory, clinical work and production ensured successful development of the Organ Therapy Institute, which was called the Institute of Endocrine Pathology Problems named after V.Ya. Danylevskyi. In 2026, Vasyl Danylevskyi was elected a member the Academy of Sciences of the Ukrainian SSR and was awarded the honored professor of the republic.

Lecture by Vasyl Yakovych Danylevskyi on the doctor, the patient and the successes of medicine (1921)

Having become acquainted with the general nature of pathological life, let us see now what the relationship between the doctor and the patient is, what image is characteristic of the patient in the contemporary society and what medicine can oppose to it.

If a mechanic has to repair a soulless, inanimate machine, his thought and attention are focused entirely on the essence of the damage and on the ways to fix it. <...> A doctor is in another position. <... > In front of him there is a living person with all his rights and feelings, with a painfully attuned soul, with elated selfish thoughts.

<... >In the past, adult patients placed themselves entirely at the disposal of the doctor. <...> Now newspaper articles, and especially advertising, skillfully support the interest and attention of the public to the issues of medicine, to new "true" methods of treatment, to "miraculous" new drugs. The public eagerly reads such printed works, without understanding if they are trustworthy, which is entirely dictated by purely commercial motives, and that sometimes it turns out to be quackery and is intended for gullible and uninformed readers.

<... >If the public so easily forgives even great failures and blunders to a healer or charlatan, it will not forgive them the doctor, especially the "famous" one.

Knowing such a critical mood of the patients, the inexperienced medical practitioners acquired a deep-minded appearance, an extremely doctrinal, authoritarian tone with the desire to fully maintain their prestige. But sooner or later the exposure will not pass... However, where patients are more cultured, there are fewer such doctors.

<... >The duty of a doctor requires him to forget about his personal moods and troubles for the good of his frail patient and inspire him with vivacity, mental stability, optimistic expectations... The patient must believe the doctor and respect him already through such self-denial for the sake of helping his neighbor. The patient must be sure that, in spite of personal worries and bad mood, the physician treats him as he would like to be treated if he fell ill with the same disease (Sydenham Th., 1624–1689).

Now you will understand the requirement of old teachers of medicine that doctors be practitioners-psychologists, so that in the treatment of the body they keep in mind the psyche of the patient. And this is necessary not only for the purposes of modern psychotherapy, but also, in addition to this special task, in order to recognize the patient's soul and direct it for the benefit of himself to eliminate mental obstacles of every kind. Ancient doctors knew about this. Love, hope, joy accelerate blood circulation, increase appetite and facilitate the treatment of diseases (A. von Haller, XVIII century). Hufeland Ch.W. argued that such a beneficial effect was characteristic of all elated emotions and feelings.

Hence it is clear why it is so important for medical education to teach psychology, and not only for the purposes of psychiatry and neuropathology, but also for the internist, gynecologist, school doctor, etc.

<...>in hysterical persons, hypochondriacs, with increased nervous unilaterally focused irritability, intense attention and imagination or, so to

speak, mental polarization can cause distinct disorders in the nervous system, autonomous and involuntary, that is, it can aggravate and generally modify existing disorders, for example, in innervation of the heart, blood vessels, glands, smooth muscles, internal secretion, etc.

<...>Where it is a question of functional (not organic!) nervous system disorders, the doctor can sometimes be limited to psychotherapy only.

<...>After all, the whims, intemperance, selfishness of an adult patient resemble the properties of childhood. Weakening of the mind directives and the higher "regulatory-restraint centers" degrade the adult psyche, in a sense weakening it to a state characteristic of an underdeveloped brain. All this is understandable for a doctor who knows that the higher functions of intelligence and restraining mechanisms of will, guided by the dictates of reason and morality, are later life acquisitions, and therefore the least stable, and the most vulnerable, for example, in diseases. Hence there is a temporary predominance of primary, more strengthened feelings, inclinations and instincts and, above all, in the form of an expressive increase in egoism, rigidity and inequality of character, mood.

<...>The struggle of the "Law against the Miracle" (in other words, education against prejudice and unconsciousness) should continue for many, many years before the kingdom of Reason and science comes, when knowledge and logic, not credulity, blind imitation and instincts, will direct and control human actions.

If in many healthy people superstitions so often motivate their behavior and actions, a sick person is subjected to this to a greater extent.

<...>His/her motives and criteria become dominant (feelings, passions, instincts), as is characteristic of the lower order psyche. For example, in children, savages. On the contrary, the higher the cultural and education level of a person, the stronger the active and powerful dispassionate imperatives of the objective mind, the more volitional acts obey them and the more inhibition and regulation of feelings and instincts occur. Such a mental system is a product of high progressive development. It requires a high organization of the telencephalon, and most importantly, its health. It guarantees impartiality and justice, which is so sharply contradicted by the stubbornness and prejudice of another patient who does not recognize anything outside his personal interests.

<...>Practicing doctors attach great importance to strengthening and encouraging influence of religious beliefs on the shattered psyche of patients. They serve only as a "moral anchor" in which spiritual life can be firmly held, weakened and disorganized by the disease. Recognizing such a psychotherapeutic effect, doctors are usually indifferent to the very content of beliefs, their form, and external manifestations.

<…>Strong mental unrest can undoubtedly greatly affect innervation and body functions (blood circulation, blood composition, lymph outflow, secretions, internal secretion glands, blood distribution in the body, absorption processes, digestion, internal breathing, tissue nutrition, etc.). This is confirmed by numerous physiological experiments on the influence of the telencephalon on the autonomic functions of the body, which our will cannot directly influence.

<...>Let me remind you the well-known fact that people who are distrustful, with an unstable nervous system, especially vasomotor, can have painful disorders in the form of vomiting, diarrhea, bloating, local edema, relaxation of sphincters, anesthesia and motor paralysis, weight loss, skin paresthesias, etc., under the influence of only one highly tuned idea or suggestion.

<... >There can be no doubt that in the vast majority of cases of real healing of patients by all sorts of healers, it is a matter of psychotherapeutic influence.

<... >it must be remembered that in many cases functional disorders, for example, some neuroses and psychoneuroses, can cause real organic persistent suffering. Sometimes one mental shock is enough for such a serious illness as, for example, motor paralysis, dumbness, etc., to disappear immediately and without a trace before the eyes of surprised others. We are talking about "psychogenic" disorders, when the primary damaging factor acts in the mental environment, and secondary symptoms can be bodily lesions. As for this occasion, modern doctors and clinicians who use psychotherapeutic methods of treatment have accumulated a huge casuistic material, which is scientifically substantiated.

<...>Perhaps the reasons for this socio-household anomaly include the fact that earlier, the respected institute of "home doctors" was much more common than now, which, through constant communication with the public, maintained respect for medicine in it. On the contrary, at present, apparently, due to the general rise in price of living on the one hand and the active specialization and multiplicity of representatives of medicine on the other hand, such communication is al-

most absent, and meetings with doctors have acquired the character of short-term, hasty contacts in which both interlocutors see each other for the first time, and often for the last time.

The "home doctor" used to be a "the friend of the family" which he visited not only at the time of someone's illness, but at other times. He was asked questions, he was consulted on hygiene, on family and household issues, as a kind loved one who has long known all family members. After all, he had to monitor their growth and life. He knew the "individuality" of everyone. Hence it is clear why such a doctor could incomparably easier and more correctly focus on treatment, prognosis and even diagnosis (especially in disorders of the nervous system, the influence of heredity, etc.).

<...>It must be added to all this that the home doctor, thanks to his tact and reasonable attitude, enjoyed great trust and respect. He kept at such a moral height with great dignity and with great benefit to the family. His position required him not only to know medical affairs, but also to be a person in the best sense of the word. He had to have high moral qualities, without which the position of a doctor, especially a home doctor, becomes very precarious: they are honesty and kindness, restraint and straightforwardness, truthfulness and compassion, absence of Pharisaic hypocrisy, false arrogance of a charlatan, understanding his own dignity. In medicine, he had to be almost an encyclopedist, to treat various diseases. In those old times, however, the medicine itself was less developed, not so wide, its therapeutic methods and means were simpler and more unvaried.

<...>Without a doubt in the essential fruitfulness of specialization in medicine, which enables a deeper and more thorough assimilation of the field, you still must firmly remember that no matter what your medical specialty is in the future, you should not ignore the states of the whole human body, its general diseases and deviations. "First – a doctor, and then – a specialist!"

This implies the necessity to conclude that for any specialist doctor a thorough knowledge of all medicine is necessary, and only on such a strong foundation can any specialties be further acquired. Life, however, proves that even great experts in their specialty can sometimes be backward in the general medicine. Even worse is the fact that they choose the future specialty on the student bench and this creates an obstacle for serious assimilation of other disciplines of the medical course.

<...>Until now, we have analyzed the cases that concerned only the individual interests of the patient. But he is a member of the community, the collective, and therefore it reflects social interests. Given this, the doctor has to guard not only individual health, but also public one. He must follow the interests of both personal happiness and social good – as far as his professional activity is concerned. Caring for the relief of a patient with an infectious disease, the doctor is obliged to take measures to isolate him for the safety of others.

This also includes supervision of the doctor for schools, factories, market places, railways, etc. All this drives the doctor out the individual conditions of life and health and adjusts him to many other issues of public improvement and wellbeing.

<... >outstanding success and studies that take place in purely theoretical science are very often unnoticed for the low-cultural public, because, I must admit, doctors so little and so rarely replenish people's knowledge with their popular lectures.

Meanwhile, especially in the recent 50 years, scientific medicine as a theory and medicine as *ars medicina* (from lat. – *medical art*), has made tremendous progress. Statistics of morbidity and mortality, especially from injuries in war and in general from contagious diseases, shows with evidence the huge progress of medicine, because a sharp drop in mortality does not depend on an increase in the general level of culture, but precisely on the improvement of medicine. In the Crimean campaign, the military died from diseases more than twice as many as were all killed and wounded. On the contrary, in the Japanese war, 30,000 people died from weapons, and only 1,200 from diseases.

<... >Using various methods (physical, chemical, physiological, microscopic, bacteriological), the doctor is now recognizes diseases incomparably easier than before.

<...>Regarding the progress of pharmacotherapy over the last period, it is impossible not to point out its major acquisitions in the form of a number of new drugs and methods of use. Examples include new salvarsan, salicylic acid and its many derivatives, iron and arsenic.

Organ preparations, which have appeared in the recent period, were prepared from various organs of animals, for instance Spermine, Adrenaline, Pituitrin, Thyroidin, etc. <...> The brilliant success of vaccinations in humans and domestic animals led to the fact that Pasteur institutions appeared in all countries of the world to combat infectious diseases (rabies, anthrax, malaria, yellow fever, sleeping sickness in humans, etc.).

<...>Major acquisitions of medicine in the recent years include a method to diagnose latent tuberculosis. Such diagnostic tests, performed on a large scale, indicated the spread of tuberculosis, which doctors did not suspect before this method of diagnosis. We should not forget that tuberculosis bacillus affects both the lungs and bones, glands and other organs.

At the same time, it is necessary to point out the success of the individual fight against tuberculosis diseases in the recent years, especially through social health care, aimed mainly at improving the soil, housing, water supply, food. The hope is put, in addition to personal events such as enhanced nutrition and proper lifestyle, in sanitary and hygienic measures on a large scale. At the same time, we must remember that the most dangerous for infection is the early childhood age, when the body still has little resistance to tuberculosis infection.

Strengthening the efforts and health care, raising the working capacity of the people, increasing the average life expectancy are the main tasks that life poses to medicine, which, according to natural laws, develops and becomes more complicated towards cultural progress.

<...>The most difficult task of health care, the continuous struggle against ignorance and backwardness, against "evil will", avarice and greed, selfishness and heartlessness falls on the share of public medicine, this newest branch of knowledge, which originated for the first time before our eyes in the second half of the last century... One of the means for this struggle is health education of the population, which requires at least the beginnings of general scientific education in all its mass.

The second weapon will be medical statistics, which now provides social medicine with such huge services as an objective reflection of its success and significance.

Sanitary legislation, created from the instructions of medical science, is the achievement of the new time. On the basis of health education of the inhabitants, it will turn out to be a powerful instrument of public and personal health, of course, depending on the general legal order and on the general cultural level.

We will confine ourselves here to a few indications of the remarkable results of its progress. These facts include the use of local and general anesthesia during operations, antiseptic method, asepsis, organ transplantation operations (cavitary, plastic), preventive vaccinations against cholera and bubonic plague in humans, new science medical bacteriology, discovery of pathogenic microbes for many diseases, successful fight against epidemic infectious diseases, diagnostic reactions to typhoid fever, syphilis, invention of therapeutic vaccines and serums, serodiagnosis, foundation of Pasteur institutes, fluoroscopy, chemotherapy, destruction of harmful microbes, invention of salvarsan to treat syphilis and relapsing fever, therapeutic use of light rays, scientific development of electrotherapy, close convergence of medicine with natural science...; the study of innate and acquired immunity, anaphylaxis; scientific development of psychiatry on an anatomical and physiological basis, scientific psychotherapy, including hypnosis... etc.

<...>Of course, in many ways medicine is still powerless: for example, it cannot fight confidently against cancer, as well as does not know what the essence of this terrible malignant neoplasm is.

<...>To study the conditions of aging, both external and internal, in special scientific institutes – the task that can provide a huge practical help to a person. After all, we must not forget that prolonging life or preserving strength for only a few years is a huge economic value for the population.

Whatever the gaps in our scientific and medical knowledge are, the progress is so great that this recent period of development of medicine is undoubtedly outstanding in its fruitfulness in the entire history of medicine.

Of course, everyday remnants can finally disappear only under the influence of the general educational upsurge and the associated social education. Hence it is clear why, in fulfillment of his broad professional tasks, the doctor should first of all be a representative of general scientific education, with a broad outlook, and not a simple specialist-craftsman.

<... >The prestige and huge merits of a scientifically educated doctor will become even more justified and understandable if we turn from the tasks of individual medicine to the program of public service. And this will be the topic of the next lecture.

Afterword

<...>It seemed necessary to remind the society of the scientific and moral height of the mission of the doctor and to warn against anything that could lead to the diminution of his social prestige. Of course, it would be both closer and easier for practicing professors and doctors, as more competent persons, to highlight these issues; but, perhaps, the real book of the physiologist will not be super-

fluous. They would be able to better demonstrate to the reader the importance and success of Medicine, they would dwell, for example, on the organization of medical care and sanitary and hygienic supervision, about which I say so little, on Dietary Therapy, which is completely lost here, on the protection of childhood and motherhood, on the fight against tuberculosis and alcoholism, insurance medical organizations, on the socio-economic side of medical activity, on health education. <... >medical and sanitary-hygienic practice usually lies outside our horizons; but still, at a time when the voices of practical physicians are heard so little, the reader may need our voice.

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