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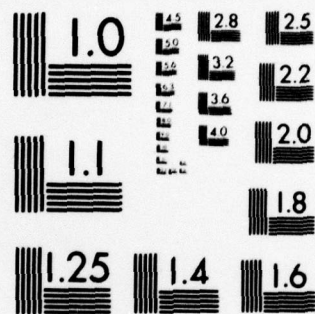
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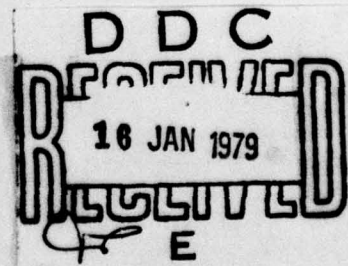
FOREIGN TECHNOLOGY DIVISION



MAN AND THE ENVIRONMENT

by

M. Janislowski



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Man and the Environment

by

Maciej Janislowski

Let us recall fragments of the report by former UN Secretary General U Thant, published on May 26, 1969, on "Man and his environment":

"For the first time in the history of mankind a global crisis appeared affecting both developed and developing nations -- this crisis is about the relation of man to his environment. Signs announcing this crisis were seen for a while-- demographic explosion, insufficient **integration** of greatly developed technology with natural environment, destruction of fertile lands, unplanned growth of urban areas, diminishing of open spaces and extinction of many forms of plant and animal life. Undoubtedly, if this process will continue, the future life on earth may be endangered. It is a burning issue then to examine the problems of environment **endangerments**, which would deny mankind the realization of its highest aspirations and to undertake the efforts to prevent such a danger."

Moderate in its tone, but in fact very alarming U Thant's report, puts in the international forum the problem of destruction of **the biosphere** the area where life is possible.

And not without **cause!** Scientific - technological revolution has larger and larger influence on the course of contemporary history, leaving its mark on the current period of human history.

Looking from the point of view of human needs and necessity of protecting his body and psyche, one may already single out the thread in

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form of noise and air pollution in cities and excessive use of chemicals in the entire human life environment.

Just imagine: 200 million cars worldwide dump into the atmosphere close to 600 thousand tons of carbon monoxide every day!

* * * * *

It is at the most 15 minutes drive to downtown Warsaw, but here it is somehow different, peaceful... Low-set, one story building in tree shade, around several hives the bees are buzzing. The tablet at the entrance says: "General Karol Kaczkowski Military Institute of Hygiene and Epidemiology" (WIHE).

The Institute's traditions date back to WW II. Its founding was preceded by activity of the Sanitary - Epidemiology Laboratory of the 5th Front, and then by the Central Sanitary-Epidemiology Laboratory. The first director and organizer of this, then front line unit, was Capt. Edmund Mikulaszek, M.D., presently the chairman of the Institute's Scientific Council. In February 1957, the Laboratory underwent reorganization structurally similar to the scientific institutions -- four divisions were formed, further divided into sections. In the same year, the planned scientific/ research activity have started, and the efforts by then director Col. Nikonow resulted, that by an order of Minister of National Defense on Feb. 10, 1960, the Laboratory was transformed into the Military Institute of Hygiene and Epidemiology, which in June of that year, was named after the first head of Health Service of the Polish Army in the period of November Uprising, General K Kaczkowski.

The office of the Institute Commandant, Col. Professor Jozef Kubica, M.D. :

"The present Institute, is a large scientific and research site", says the Professor. A large team of scientific workers work in two

centers (Center of Radiological and Toxicological Care in Warsaw, and Center for Microbiology in Cracow).

"As a result of many years of planned activity we already have a proper staff potential. It consists of 6 Professors, 13 Habilitated Doctors and over 40 Doctors of Science. We are also accredited to **grant Doctorates** in the Medical, Pharmaceutical and Earth Sciences, since 1964, and expanded the accreditation in 1971 to conduct the habilitation process in these disciplines. As of today the Scientific Council of WHE granted 60 doctorates, and 13 officers obtained titles of habilitated doctor."

"The Council, under the chairmanship of Professor Edmund Mikulaszek, additionally granted over 20 doctorates **to civilian and** military scientists **from outside** the Institute. Several people received specialization of 1 or 2 degree."

"This constitutes", Col. Prof. Kubica adds, " the full accomplishment of the Institute's plans in the area of scientific **staff**".

* * * * *

The scientists are **alarmed:** in countries where the progress of industrialization and urbanization is accelerating, the environment is degrading. The similar threat comes from industrialized neighbors. That happened in Scandinavia where the presence **of dust and smoke in the atmosphere from** Germany and Britain was discovered.

Chief of Toxicology Program in WHE, Lt. Col. Prof. **Slawomir** Rump:

"We are conducting studies mainly on combat poisoning mechanism and their antidotes. This problem, however, despite its appearance, has many common bonds with civilian economy, and this is why in the last five years we cooperated in Polish Academy of Sciences problem: "Prophylaction and treatment of pesticide poisoning." Widespread use of chemicals in agriculture and forestry causes **a steady rise in this type of poisoning.**

They undoubtedly are **a necessary evil**, but they must be used **in the contemporary economy**. Despite the best prevention efforts, there will always be cases of poisoning, and one has to say honestly, that the present treatment is far from satisfactory. That is why there existed, and still exists the necessity of studies to increase its effectiveness."

"And what are the results?"

"We have obtained a number of new, biologically active preparations; three of them deserve further, detailed studies, in order to determine the indications and contraindications for their use. Two of the studied preparations may have more universal importance, and probably could be used not only in pesticide poisoning but also in epilepsy treatment. We have also shown, that the known tranquilizer - relanium, which also shows anticonvulsion properties, greatly improves the effectiveness of present pesticide poisoning treatment."

"What is team working on now?"

"We continue the studies that are part of Polish Academy of Sciences problem, where we work on "Studies of cholinergic system mechanism." It is a part of a **sub-problem**, "Compounds of high biological activity." We are, it is worth to emphasize, one of the few centers in Poland that put together **a team of** chemists, biologists and physicians, whose common goal is to obtain a new drug. Of course, our studies are only the first step towards obtaining a new drug. We are a neuropharmacology team, which experiments on animals, and there is a long way to put our results into practice. Nevertheless, the drug mentioned by me, relanium, is already used in human poisoning treatment."

* * * * *

A soldier in a gas mask and dressed in **a Martian-like suit, digs a hole**. Connected with multiple cables to an apparatus registering the **exhaustion parameters** of his body, and many other reactions, he is a

subject of studies by workers of Occupational Physiology and Hygiene sector of WIHE.

"Because of the Institute's charter, " says Col. Prof. Zbigniew Jethon, "the problems worked here pertain mainly to military activities. One has to emphasize, however, that no problem, even **those most closely related to defense**, is completely removed from **the general problems of** physiology, medicine, psychology, agronomy and other disciplines connected with human labor. The main problem we presently work on, is the **study** of changes in ability to perform physical and mental work in adverse environmental conditions. And so, for example, we conduct the studies on work quality of heavy construction equipment operators, ability to work in high environment temperature, and the analysis of ability to exist in an environment in which, in addition to elevated temperature and humidity, there is increased concentration of carbon dioxide. Such a condition may be found in mountain rescue or in steelwork."

Another example of the sector's activities. Professor Jethon shows the preparation for individual water purification "Iodocyt". An organic iodide preparation with a strong bactericide properties, several times better than the presently used chlorine preparation "Plantocidum", "Iodocyt" was tested in the Hygiene Laboratory of WIHE, and the laboratory synthesis of iodine preparation series, and the development of production technology was done by Professor Kupryszewski from Gdansk University.

From the first idea to the practical production and application took only two and a half years!

* * * * *

Shown two scientific sectors **of the Institute is only a limited segment of the scientific** activities of people in uniform. Their scientific successes are already known in the world, for example, the one we wrote

about last year, concerning the cancer treatment, for which the Szmigielski's team received the international Zimmermann award.

Professor Kubica: "Changes in mans natural environment, especially in military service conditions, **are sometimes exceeding the adaptive** properties of the human body. In the next few years the Institute will work on finalizing the general form of all detrimental causes threatening the human health or lowering his ability to work or **to serve**. In the center of interest of our staff will remain problems of prophylaxis. They are and will remain one of the base branches of contemporary medicine, so especially relevant to **the military medical service**".



Chairman of WIHE Scientific Council Professor Edmund Mikulasek



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