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THE ENVISAGED ROLE OF THE HEALTH SERVICES AND THE EDUCATIONAL SCIENTIFIC AND RESEARCH INSTITUTES IN VECTOR CONTROL

by

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Vector control can be effective only if it is carried out by highly qualified personnel on the basis of systematic scientific research. The close connection between theory and practice is a prerequisite for obtaining higher efficiency of disinfections, higher productivity of labour and lower costs of activities.

1. Services participating in vector control

The control of vectors of infectious and parasitic diseases is carried out under the direction of the Ministry of Public Health The responsibility for the organization and realization of all the activities in the field of disinfection, disinsection and deratization rests with the Direction for National Sanitary and Epidemiological Control , however, the training of medical students, the qualification of specialists in medicine and biology and scientific research in this field lies within the competence of the Medical Academy.

At the Medical Academy there are four higher medical institutes, where the tuition of medical students takes place. The problems of disinsection and deratization, as well as the role of arthropods and rodents as vectors and hosts of infectious diseases are covered by a special course included in the curriculum and organized by the corresponding Chair of Epidemiology

In Sofia, the Chair of Epidemiology is integrated, including also the Disinfection, Disinsection and Deratization Section. Besides many specific tasks that will be discussed later, the specialists at this Section are responsible for the training course on the above-mentioned subjects.

Only in Sofia the Chair of Epidemiology organizes and carries out courses for post-graduate qualification of trained specialists in epidemiology and biology following special training programmes.

Specialists working within the systems of the Ministry of Internal Affairs, the Ministry of Defence and the Ministry of Transport are included among the participants in these courses.

College and secondary school graduates (instructors in disinfection and disinsection, laboratory assistants, feldschers, etc.) receive their special schooling and training at the Institute for Secondary Medical Personnel in Sofia. The specialists at the Chair of Epidemiology read there also lectures on the problems of disinfection, disinsection and deratization.

The specialists necessary for the veterinary services are trained at the Higher Institute of Veterinary Medicine and the specialists in plant protection at the Institute of Agriculture.

2. Forms of teaching

a) lectures and practical exercises - for the students,

b) entomological studies - for the physicians in training,

c) post-graduate courses - for physicians, biologists, instructors in disinfection and disinsection,

d) organizational and methodological assistance (in case of trying out new methods, preparations, devices, etc.)

e) annual conferences - the specialists at the Section read reports including analyses and evaluation of the results obtained during the preceding year and recommendations concerning activities foreseen for the current year;

f) seminars, symposia and demonstrations carried out in collaboration with some firms producing preparations for disinsection,

g) regional conferences dedicated to specific problems e.g. mosquito control along the Black Sea coast.

3. Training Aids

The specialists at the Chair of Epidemiology have published textbooks and manuals for the students and the physicians in training. Separate monographs on Disinfection, Disinsection and Deratization and on Decontamination have also been published They are designed for post-graduate qualification.

A Handbook on Disinfection, Disinsection and Deratization is in the press. It is addressed to the specialists working in the field of medical disinsection and deratization. It covers the biological characteristics of the most significant vectors and the methods and means for their liquidation.

The quarterly journal "Periodical Bulletin on Disinfection, Disinsection,and Deratization" is a helpful manual and source of working knowledge for all apecialists in this field. It includes all the organizational documents and forms and instructive and methodological materials approved by the Ministry of Public Health, as well as some reports on scientific research in this sphere.

It is necessary to publish also specialized handbooks covering characteristics and indices of the separate groups of arthropods. At present only handbooks in Russian (by Russian authors or publications of the World Health Organization) are being used. But we have already gained experience and this task can soon be accomplished.

A specialized Institute for Health Education is organized at the Ministry of Public Health. Each Hygiene and Epidemiological Inspectorate incorporates also a Department on health education The workers in the field of health education organize their activities in close collaboration with the sectiona..d departments on disinfection, disinsection and deratization - at national as well as at local level. The propaganda materials - films, slides, newssheets, articles for the mass media, posters, etc. - are worked out by these departments and the Section and then are distributed amongst the population by the health education workers.

Specal meetings are being organized in the towns and villages of the country, at various establishments at schools, recreation camps, etc. Their basic aim is to make the population acquainted with the biological characteristics of parasites, their medical importance, the necessity to organize systematic and effective pest control and the role of the entire population in vector control, in order to obtain satisfactory results.

4. The necessity of scientific studies in the field of disinsection and in testing new methods

Scientific studies play an important role in the Programme for Vector Control. They have to be carried out by highly qualified specialists according to well established plans. The results obtained have to be reported periodically.

The direct application of the results obtained in actual practice is very important and we have achieved it. In the process of working out the preliminary planned scientific problems, multidisciplinary teams participate, including practical workers, i.e. the biologists from the Hygiene and Epidemiological Inspectorates.

Scientific research has to be directed in the following fields:

- Comprehensive study of arthropods and establishment of their medical importance. These studies have to be carried out by a multidisciplinary team including epidemiologists, microbiologists, virologists, parasitologists, entomologists, etc.

- Examination of the specification and dissemination of the most important species from the medical point of view.

- Investigation of the biological and ecological characteristics of the most important vectors (reproduction, development, numbers, etc.).

- Tracing biological agents which can be used for vector liquidation. It is necessary to observe the representatives of the local fauna (predatory animals, bacteria, nematodes, etc.). It is not advisable to make use of such species that are not peculiar to the given country, in order to preserve ecologic equilibrium.

- Tracing new chemical compounds which are highly effective in vector control, but at the same time innocuous in warm-blooded and useful invertebrate animals. In this direction the investigation of local strains of insects under corresponding

climatic and geographical conditions is very important. Imported pesticides are accompanied by prospectus data, but these are not sufficient - it is necessary to carry out local studies in order to determine the appropriate doses, concentrations, etc.

- Looking for new forms of pesticides application in order to minimize environmental pollution, to obtain higher labour efficiency and to increase the effect of chemical compounds.

- Investigation of ecological methods for insect control.

- Examination of the role and place of land improvement projects.

- Studies on integrated control.

- Investigation of arthropods' resistance to different preparations and clarifying mechanisms of resistance.

Besides scientific research, the Department of Disinfection, Disinsection and Deratization has also some specific tasks·

- Carrying out thorough examination of all foreign and Bulgarian preparations for disinsection and deratization. The results obtained have to be reported to the Ministry of Public Health. According to current stipulations, no preparation can be imported or used without a written certification of biologic efficiency. These statements are submitted to the Commission on Toxicology which has the right to approve and register the presented preparation. In case of purchasing a preparation, not only its efficiency, toxicity and other characteristics are taken into account, but also its price.

- Working out instructive and methodological materials which, after being approved by the Ministry of Public Health or by other State Institutions at a higher level, become obligatory for all.

5. Financing and co-ordination of scientific research

Scientific research is financed either by the Ministry of Public Health and the Committee for Scientific and Technical Progress, or within contracts concluded with commercial enterprises and organizations.

There are several levels of co-ordination of scientific research between the Chairs of Epidemiology, Parasitology, Microbiology, Virology ; interinstitutional co-ordination between the Medical Academy and the Bulgarian Academy of Sciences and the Institute of Zoology, and at international level - many scientific projects are being worked out in collaboration with institutes and specialists from other countries (e.g. USSR, Czechoslovakia, Yugoslavia, Hungary, etc.).

Scientific workers are also in touch with different firms - producers of pesticides.

The assistance of the World Health Organization - in the form of instructive materials and relevant information - is very useful.

Participation in international activities (congresses, symposia, seminars, etc.) provide a valuable opportunity for exchange of the latest information in the field of disinfection, disinsection and deratization.

The People's Republic of Bulgaria is a small country, consequently, the number of scientists working in the field of disinfection, disinsection and deratization and in particular in the sphere of disinsection, is also small. Nevertheless these scientific workers perform important assignments closely related to actual

practice. Due to good organization and co-ordination, no sharp division can be made between theory and practice. Theoretical science is well developed and practice tries to keep pace with it. This can be achieved only with efficient organization and management.