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TO FURTHER ADVANCEMENT OF PARASITOLOGICAL SCIENCE IN CZECHOSLOVAKIA

The congresses of Communist and Workers' parties in socialist countries are important milestones on the road of further building of socialism. Consequently, the 16th Congress of the Communist Party of Czechoslovakia, held between 6 and 10 April 1981, was a great event in the history of our country, showing the way to the building up of an advanced socialist society in Czechoslovakia. The general line of this building pointed out at the 14th and 15th Party congresses and worked out at the 16th Congress, constitutes a complex Marxist-Leninist programme for all fields of political economic, social, cultural and scientific life in Czechoslovakia. The Party Congress widely dealt with the problems of further development of socialist democracy.

The proceeding of the Party Congress attracted constant attention of Czechoslovak citizens irrespective of their profession. They were the focus of attention alike of workers and cooperative farmers as well as scientific and academic workers because the accepted conclusions, main reports and discussions of the Congress signified the key orientation for their further work and brought forward suggestions for further creative initiative. The Congress materials made the workers of scientific disciplines, be it in fundamental or applied research, aware once more of their role in a wider application of science and technology in the entire national economy.

The president of the Czechoslovak Academy of Sciences, Academician B. Kvasil, also contributed to the discussion at the 16th Party Congress. Our parasitological community listened with great interest to his statement that among 18 target projects of the fundamental research aiming at a speedy solution of problems, also included was the project: "Protection of large-scale animal production units against parasites", whose results would be used in agriculture.

The parasitologist of any line is well aware that systematic reduction of losses of any kind in livestock is one of the prerequisites for the fulfilment of challenging tasks in the field of animal production, set up for our economy by the 15th and 16th Congresses of the Communist Party of Czechoslovakia. The Czechoslovak parasitology, while elaborating the conclusions of the said Party congresses, has therefore directed its attention to the complex studies of parasites in most important food-producing animals. These studies include both, some basic theoretical problems and main application of knowledge obtained to the practice. What are the primary problems to be solved by parasitology in the target project aiming at a speedy development of the Czechoslovak animal production?

Not only veterinary parasitology is deliberately mentioned because the participation of all branches of parasitology is necessary if qualitatively quite new problems never encountered before in the past are to be solved, and requiring entirely different methodical approaches to the prevention of parasitoses. Large-scale animal production under new technology requires a multi-disciplinary solution of a number of physiological, ecological and etological parasitological problems, including environmental parasitology, i.e. the research of the effects of environmental changes, caused by various human activities, on the occurrence, numbers and populations of parasites. In its research plans the target project includes a number of tasks in which the existence of main parasite species, parasitoses and pathogenic agents transmitted by parasites are to be solved while using different technological procedures in animal production. The first knowledge on some animal parasites has already been gained which is important for the prevention and improvement of technological procedures. E.g. at the Institute of Parasitology, Czechoslovak Academy of Sciences successful results have been obtained in the control of infections caused by coccidia, some helminths and in the control of parasitic insects, at the Helminthological Institute, the Slovak Academy of Sciences, in the prevention, morphology and invasive cycles of the most dangerous helminths.

The solution of the most complicated parasitological problems, however, requires a thorough theoretical knowledge on biological, physiological, immunological and other properties of parasites. Only on the basis of such knowledge effective therapy and prevention of parasitoses and viral bacterial diseases transmitted by parasites can be achieved. While studying the parasites of all groups all the more used are biochemical methods in connection with cytology, ultrastructure, genetics and taxonomy, and ecological methods in connection with the ecology of species and studies of parasite populations and with regulatory systems in the parasite-host relationship, making possible the mathematical modelling of these consistent patterns. An ever-increasing attention is paid to the role of vectors in the circulation of causative agents of different diseases of man and animals due to the rising number of cases of diseases transmitted by different animal vectors.

The influence of man on parasites is studied in detail. This influence becomes manifest when suitable conditions are created for gradual penetration of different epidemiologically and epizooto-

logically important vertebrates and arthropods into the immediate vicinity of rural and urban habitations of man as well as large-scale animal production units. On global scale the solution of these problems becomes the objective of scientific efforts because it is closely connected with the health of man whose indicator may be the health of animals.

The studies on these problems, closely connected with our target project, have been emphasized by the meeting of WHO and FAO experts. At present many disease cycles, including parasitic diseases, already take place in conditions artificially created by man's activities, e.g. in large-scale units of livestock. The latest WHO/FAO publication concerning this field contains a number of suggestions for parasitological disciplines. (Parasitic zoonoses. Technical Report Series No. 637, WHO, Geneva, 107 pp., 1979.)

Consideration is given to different investigations as to how man himself contributes to the spread of parasites and their maintenance under conditions of rapidly urbanized, cultivated and devastated landscapes. Veterinary public health studies connected with the ever increasing industrialization of animal production come to the forefront. It is in the industrialization of animal production that the countries of the Socialist community attained a leading position. It is therefore necessary to carry out new studies qualitatively different from those already known.

The problems solved by the Czechoslovak parasitological research centres are coordinated with the research done in other countries, primarily socialist countries headed by the institutions of the USSR Academy of Sciences. In some fields this coordination has transformed into a close cooperation. Moreover, a more intensified inclusion in the international division of labour is one of the postulates comprised in the conclusions of the 16th Congress of the Communist Party of Czechoslovakia.

The theoretical assumptions for the future anticipate that the more natural conditions will be changed due to human activities, the more the landscape will be cultivated, the more complex will be the adaptation of parasites to their environment. On the basis of the present research we can predict today that some parasites and various zoonotic components of natural foci of diseases will get continuously adapted to the changes of landscape and to facilities built by man. With the gradual cultivation of landscape the majority of dangerous biocenoses will gradually disappear. The remains, however, will persist and adapt to new conditions, including the fully urbanized areas. In the parasitological science enough examples are already available today from all parts of the Earth.

Although it is estimated that in the next twenty years progressing over population, exhaustion of natural sources, degradation of natural systems, particularly of arable land and of forests will lead to the extinction of 500 000—1 000 000 of animal and plant species, numerous parasitic species will obviously "save" its dangerous existence. The parasites will develop in urban cycles and natural foci of diseases will take either anthropurgic or synanthropic character. Everything will depend on the targeted activities of man, whether he will be able to eliminate the existing parasites and natural foci of diseases during cultivation of his environment. It becomes clear today that technicians of most varied lines should consider the potential occurrence of parasites and natural focality of diseases while building any technical projects of agricultural or industrial character. They should plan their undertakings in a way that would exclude favourable living conditions for parasites, reservoir animals or vectors of diseases. Such ecological projects leading to the sanitation of the living and working conditions would often involve no further cost necessary for the antiparasitic control and therapeutic measures. It is not an easy task. The present research of parasites, parasitoses and natural foci of diseases proves to be impossible without an interdisciplinary approach and without an active participation of many different scientific fields working with integrated efforts.

Parasitological research centres of all trends in Czechoslovakia will adopt the tasks set up by the 16th Party Congress in their work. In the 7th five-year-plan one of the most important parasitological research centres will be built in Czechoslovakia, namely the Institute of Parasitology, Czechoslovak Academy of Sciences in České Budějovice, within the new scientific base of the Academy. This fact will be a good condition and stimulus for the fulfilment of tasks which our Socialist society, led by the Communist Party of Czechoslovakia, is expecting from the parasitological science in this country.

Academician B. Rosický