

NATIONAL BIOLOGICAL CONGRESS

Confusion, Hope and Gloom

from a Special Correspondent

Detroit, November 1970

THE first National Biological Congress was, like the curate's egg, good in parts. Sponsored by the American Institute of Biological Sciences and by the Federation of American Societies for Experimental Biology, the meeting was held in Detroit on November 7-10. It was announced as a major effort in scientific communication between biological investigators presenting their findings in basic science symposia, on the one hand, and legislators, administrators in industry and government and the general public on the other hand. Students and college teachers were to bridge the gap, and discussions of public issues and of basic science were to be the main concern of the congress, with its overall title "Man and Environment". Although some of the science and some of the discussion was first rate, the meeting was not the success which we had all hoped it would be. Only occasionally could one see signs of hope for the future and the role of biology in that future.

During the four days, eleven sessions were held, and forty organizations and scientific societies participated. There were eight simultaneous sessions, fortunately in rooms close to each other, but clearly this report can be no more than one individual's impressions. Some at least of the scientific presentations were outstanding and exciting, but the 2,800 who registered—a fair proportion of them high school and college students—only rarely showed enthusiastic involvement.

The keynote speech was by Dr William D. McElroy, the director of the National Science Foundation, on "The Role of Science in Public Affairs". This reporter has the impression that Dr McElroy's speech cast considerable gloom over the biologists present at the congress, because it seemed to urge them to follow the apparent official trend towards goal-oriented research, to do socially useful research at the expense of fundamental work. The scientists who were present were unhappy to hear such words from the supposed champion of fundamental research.

The three mornings of basic science symposia presented a smörgasbord where one might "simultaneously partake of sessions on genetics and molecular biology, metabolic transformations, cellular and subcellular structure and function, developmental biology, function of tissues and organs, behavioural biology, ecology and also evolution and population biology". In genetics and molecular biology, sessions were held on DNA replication and transcription, protein synthesis and on the three-dimensional structure of macromolecules. All of

these were well attended and presented a well organized if somewhat too specialized picture of the current thinking.

In developmental biology the subjects ranged from genetic aspects of development and gene regulation in developing embryos to the growth of whole plants from single cells. Particular attention was paid to developmental abnormalities—a subject very much in line with the overall intention of the congress—with a description of the genetic approach to causation of developmental defects in mice and men by Dr Salome Waelsch and a discussion by Dr Barry Pierce of the cancer problem in terms of the failure of stem cells to differentiate.

In behavioural biology, the papers included discussion of alcoholism and drug addiction as well as behavioural genetics with, for example, an excellent lecture by Dr Julius Adler on the genetics of chemotaxis in bacteria. What may well be a break-through paper in behavioural biology and neurobiology was Dr Seymour Benzer's description of how he obtained behavioural mutants of the fruit fly *Drosophila*, how he constructed mosaics with some of these mutants and how he analyses the mutant phenotypes. It may well be that the use of mutants as practised by Benzer in *Drosophila* and by other investigators will prove to be the most incisive method for cracking the complexities of neurophysiology and of behaviour. At the other end of the scale, a session was devoted to learning and development in the human neonate. For example, a paper on the role of the mother in influencing the early development of infant behaviour was read by Dr Evelyn Thoman, presenting a serious attempt to investigate the effect which modes of handling of the infant has on such parameters as cessation of crying and degree of visual alertness.

One specific occasion when a basic science symposia was really crowded and full of excited young people was, not unexpectedly, a session in the ecology series on population and resources chaired by Dr Paul Ehrlich. Population control was the subject of speakers such as Drs Judith Davis, Paul Ehrlich and Christopher Tietze. Most of the audience were students and their enthusiasm for the personalities and for the subject was enormous. Within the limits of observation of this reporter, this session and an afternoon session on "Molecular Biology and the Future of Man" were high points of enthusiasm. The latter session was organized by the American Society of Biological Chemists and the Biophysical Society. A calculation of benefit-cost factors led Dr John Platt to the suggestion that the

most helpful thing that biology can do for mankind would be the development of better contraceptives and contraceptive techniques and the scientific selection of champion farm animals and crops. There was also the feeling expressed by Dr James Bonner that molecular biology itself cannot solve biological problems in our environment, and that only society acting as a whole can do this.

The evening sessions were devoted to three all-congress symposia on ecology, disease and chemicals. They were held in the huge Cobo Hall Arena, with the public of Detroit invited. Although the topics were certainly important enough to affect everybody in the community, the people of Detroit stayed away, perhaps watching the proceedings at home on television. As a result, only a small portion of the huge arena was filled, largely with those members of the congress able to face the third meeting of the day. • The proceedings of the ecology and the disease symposia, although rather formal, were in part very interesting. One remembers Dr LaMont Cole's statement on the subject of environmental pollution—that it was irresponsible to set up nuclear power stations with present technology, not only because of the problems of heat pollution and the disposal of radioactive wastes, but because present day plants are so inefficient that they waste more than 90 per cent of the energy of ^{235}U , a limited natural resource. One remembers also the statement by Senator Packwood from Oregon that in the areas of ecology, pollution and the environment the public must make up its mind as to what it wants and then impose its will on Congress. Speaking on the subject of genetic disorders, Dr Alec Bearn struck an optimistic note and discarded the old adage that "the only cure for a genetic disease is the grave". He looked forward to a time when prenatal investigation of the foetus in families with a high genetic risk would lead to therapeutic intervention, either treating or aborting a defective homozygote. The audience participated by sending in questions to be put on the platform and by occasional applause, while the TV cameras looked on in silence.

To repeat, this report is only one person's view of an ambitious and multifaceted event. While many individual talks were informative, enjoyable and sometimes exciting, the overall impression at the congress was one of confusion, occasional hope and, certainly, occasional gloom. This was one of those occasions where the whole is less than the sum of its parts. The avowed intentions of the organizers of this congress are unquestionably worthwhile; whether the congress succeeded and whether it should be repeated is doubtful.

(This article has been accidentally delayed.)