Topology

Before an ominous background of ever-increasing international tensions, mathematicians have recently completed a highly successful international symposium on topology and its relation to modern analysis and algebra. The symposium, which was held from 1 to 8 September in Prague, was sponsored jointly by the International Mathematical Union and the Czechoslovak Academy of Sciences.

It was interesting, and of course no surprise, to find that a large proportion of the slightly more than 100 participants came from Communist bloc countries. Only two or three of the persons in attendance had also been at the International Colloquium on Differential Geometry and Topology, held in connection with the celebration of the 50th anniversary of the Swiss Mathematical Society in Zurich last year (*1*). Specifically, there were 12 symposium participants from the U.S.S.R.; 25 from Poland; 24 from the United States; one each from Great Britain, Cuba, Mexico, Bolivia, West Germany, and Italy; two each from Japan, India, Holland, and Austria; three each from East Germany, Yugoslavia, and Hungary; six from France; and eight from Romania. The six French delegates were all young mathematicians affiliated with the National Center of Scientific Research. It is impossible in this brief account to give the names of all the American participants. Among them were M. H. Stone, who spoke on "Some topological aspects of conformal mapping"; Einar Hille, whose paper was entitled "Remarks on transfinite diameters"; and Angus E. Taylor, who reported on "The boundary of the spectrum of a linear operator."

A large group of Czechoslovak mathematicians were both generous and tireless in their efforts to have all things go smoothly, and one could not fail to be impressed by the obvious and earnest desire of the local symposium participants to be friendly, cooperative, and helpful.

The International Hotel was headquarters for the symposium; it was there that most of the scientific sessions were held, and that most of the foreign participants were housed. Some of the rooms were equipped with radios, and participants obtained news broadcasts from Munich on the Voice of America, and also from Moscow. At the hotel, prepaid Cedok (official Czechoslovak

Tourist Agency) vouchers were redeemed in Czechoslovak currency. If additional funds were desired, travelers checks were cashed and foreign currency was exchanged.

The symposium was opened on 1 September with words of welcome from professors Novák (chairman of the organizing committee), Kosesnik (vice president of the Czechoslovak Academy of Sciences), and Katetov (vice chairman of the organizing committee). After these greetings, a memorial assembly was held in tribute to E. Cech, an outstanding Czechoslovak mathematician who had had an active part in making plans and arrangements for the symposium prior to his death on 15 March 1960. Memorial addresses were presented by Katetov, Stone, Alexandrov, and Kuratowski.

At the first scientific session a keynote speech was presented by P. S. Alexandrov (U.S.S.R.). This was followed by addresses on "Relations of topological spaces" (A. D. Wallace, U.S.) and "Applications of topology to foundations of mathematics" (R. Sikorski, Poland). Additional scientific sessions were held on 2 September and on each day but one of the following week.

The topic of the symposium was the present status of the theory of topological spaces. The discussion of applications to functional analysis and modern algebra, which came up in a number of the papers, made the work seem somewhat less abstract than the developments discussed at the Colloquium on Differential Geometry and Topology in the summer of 1960. The symposium participants were supplied with abstracts which had been prepared in advance, and with periodic reviews of the program of the day. The *Proceedings* of the symposium will be published by the organizing committee.

Communications were printed in both Russian and English, but there was no restriction on the language used by individual speakers in the presentation of papers. However, an outstanding feature of the symposium was the extensive use of English. Similarly, a review of the references cited in the portfolio of abstracts shows that a large majority of the references were to papers printed in English, even though published, in many cases, in journals of non-English-speaking countries. Publications of the American Mathematical Society were cited frequently. The references covered a wide range—from Hausdorff's *Mengenlehre*, published in Leipzig in 1914, through Kuratowski's *Topologie I* (Warsaw, 1948) and *Topologie II* (Wroclaw, 1950) and the results of last year's colloquium in Zurich, to the research papers of Frolík, which are due to appear in the *Czech Mathematical Journal* at some future date. A number of speakers discussed problems which are still open.

Among the activities planned for hours when scientific sessions were not in progress were all-day tours to Karlsbad and Marienbad, world-famous spas in Western Bohemia. Although one caught occasional glimpses of large industrial developments, these tours were mainly through agricultural and vacation areas in the western part of the country.

At the final session on 8 September, Alexandrov, Stone, and Kuratowski spoke briefly on the accomplishments and the importance of this international symposium. Katetov, speaking in the name of the Czechoslovak mathematicians, then brought the scientific sessions to a close.

The members of the organizing committee for this highly significant and cooperative endeavor were as follows: J. Novák, chairman; M. Katetov and K. Kuratowski, vice chairmen; Z. Frolík, secretary; S. Schwarz and K. Koutsky. The administrative secretary was Mrs. K. Trojanová.

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Reference

1. L. Guggenbuhl, *Math. Teacher* **54**, No. 5 (1961).

Poultry Science

In 1940, 4½ pounds of feed was required to add 1 pound of live weight to a broiler; in 1961, slightly more than 2 pounds of feed was sufficient. This is a remarkable achievement, and it may have more real significance in the cold war than a space spectacular. But this is not an easy point to make—least of all with the 700 members of the Poultry Science Association who assembled at the Pennsylvania State University from 8 to 11 August in their 50th annual meeting.

In point of fact, T. C. Byerly, deputy administrator of the Agricultural Research Service, told the poultry scientists in the annual presidential address, 2 pounds of feed for a pound of broiler isn't really anything to boast about in terms of real energy conversion rates. Nor was this only the view of the presiding officer; among the 340 papers presented were many indicating that the 2-pounds-of-feed barrier was destined to go the way of the 4-minute mile.

Byerly outlined a long series of besetting problems for the researcher. These included the growing incidence of avian leukosis, a virus-transmitted disease that is now the major killer of laying flocks; lack of understanding of the genetics of disease resistance and of the effect of photo-periodism in poultry; incomplete understanding of ovulation and egg production; and lack of any significant advances, to date, in the processing of poultry.

The meetings were grouped in eight divisions—pathology, nutrition, physiology, genetics, environment, marketing, instruction, and extension. At a general session on the opening day, Eric A. Walker, president of the Pennsylvania State University, commented on the fate of the education bill in Congress.