

■ Admission of students to university education through "science O'ym pics."

SCIENCE TRAINING FOR LESS DEVELOPED REGIONS

Ours is an era in which new knowledge is accumulating in all fields. Every major scientific discovery leads to applications that require a high degree of specialization. And the growth of automation, while reducing the need for medium-level personnel, is increasing the demand for creative scientists and engineers.

It is obvious that the sooner we begin to train teen-agers, the more chances they have of becoming creative scientists.

These problems of selecting and educating youth, then of training them as engineers, researchers or industrial planners must be faced in the Soviet Union as in the United States, Britain, France and elsewhere. But whatever the economic system, various schools of thought exist within each country as to the practical

solutions that should be adopted.

In the Soviet Union, widely differing views have been expressed on the subject. I would like to describe an interesting experiment carried out in recent years by scientists at the Siberian branch of the U.S.S.R. Academy of Sciences.

The shortage of qualified specialists in research and technology in Siberia led to the creation of a major scientific centre in the city of Novosibirsk, nearly 3,000 miles from Moscow. Lack of suitable personnel was hampering the development of this immense and rich region where oil, natural gas, coal, iron and gold are plentiful. Siberia also contains the world's biggest supplies of fresh water and hydro-electric plants already in operation or under construction were creating an

enormous power potential for industry and science.

The shortage of scientific personnel was particularly acute in Siberia's schools and institutions of higher education. The research institutes, new industries and vast construction jobs were draining the best mathematicians, physicists, chemists and biologists from educational institutions, and the training of the new generation of scientists was in the hands of teachers who were not always in touch with present-day problems.

When the University of Novosibirsk was established a heated debate arose on the question of entrance requirements. Some felt that admission should be limited to youths with a definite scientific bent and some training in science. Others maintained that the doors of the university should be opened wide to high school pupils with top marks so that all vacant places might be filled. There was also a controversy between those who advocated highly specialized scientific training concentrated in laboratories and those who favoured more

traditional methods of education.

Since both sides stuck to their guns, a compromise had to be reached. But the results were unsatisfactory: too few students were being admitted and the level of knowledge was too low. Discussion began all over again and led to a new method of selecting students for the university. This plan, applied since the 1962-63 school year with excellent results, consists basically in the organization of "Scientific Olympics" and the creation of a specialized boarding school on the Novosibirsk campus.

Here is how the selection process works. Every year in November or December, the press, radio and television announce the first round of the Siberian Olympics in physics and mathematics and, beginning this year, in chemistry and biology. This round is conducted by correspondence. Ten to fifteen problems in mathematics, physics and chemistry are set and secondary school pupils have a month to send in their answers to Novosibirsk. Among the problems, some

are of our eighth-grade level and others at tenth grade. In both sections, certain questions are designed to appeal to the contestants' creative imagination. There is no limit to the number of replies sent in by contestants, for the main purpose of this first round is to awaken an interest in science. During the first Olympics in 1962-63, several hundred teen-agers took part; this year, we had nearly 10,000 competitors.

Candidates who do well in this first round are invited to take part in the second round of the Olympics held in fifteen to twenty regional centres in Siberia, the Soviet Far East and Central Asia. All expenses are paid by the Academy of Sciences. These tests, organized in each centre by three or four representatives of Novosibirsk University, are harder than the first and contestants have to solve the problems in a set time.

Winners of this second round are then invited to spend a whole month on the Novosibirsk campus at-

tending a special summer school. The first year, we had 100 young people; last summer, 700; and this year, over 1,000. Under the leadership of about 100 young scientists and senior students, the boys and girls visit the institutes and laboratories, and attend lectures given by university professors and researchers. They divide their time between study and leisure — hiking, swimming, boating, etc. This gives the Academy staff an opportunity to establish close contacts with each teen-ager.

The third and last round of the Olympics takes place at the end of the month's stay. Problems set are harder than in the previous rounds but most participants are accepted and remain on the campus, some entering the University while others who are still too young are admitted to the special boarding-school. Graduates from this school, where courses in physics, chemistry and mathematics are given by leading scientist, are assured of admission to the best scientific institutes. — *Variety*.