Comments and Communications

Soviet Science

READERS concerned with the present state of science in the USSR will be interested in the review of my *Genetics and the Races of Man,* which appeared in the Soviet journal *Nauka I Zhizn* (7), (1951). In particular it will be instructive to compare this notice with that by Th. Dobzhansky, which appeared in SCIENCE, **113**, 264 (1951). My thanks are due to Alfred G. Meyer, of the Russian Research Center, Harvard University, for checking the accuracy of my translation.

From "Science à la Américaine," by B. E. Bykhovskiĭ, Doctor of Philosophical Sciences:

The reactionary geneticists show themselves as frank tools of American racism. Boston University Professor William Boyd recently released a book with the significant title "Genetics and the Races of Man." This "work" of an American geneticist was forthwith advertised as "a revolution in anthropological thinking founded on Morganism." This "revolution" consists in the fact that Boyd put "a new theoretical foundation" under race hatred. Not being able to deny the obvious bankruptcy and pseudoscientific character of the racist theories preached by the Hitlerite fascism, Boyd sets himself the goal of renovating and bolstering up racism with the aid of genetical metaphysics. "If racial categories are to have a sound theoretical foundation," declares Boyd, "they should be based on the genetical constitution of man." In order to realize this aim, Boyd proposes a "method" of defining and classifying human races on the basis of "genetical analysis" of the blood. "Blood groups," preaches this myrmidon of racism, "give the most reliable information for racial anthropology, since they are not influenced by the environment." Thus Morgan genetics inspires American racist "methods" for determining racial affinities and the percent of "Anglo-Saxon" blood. The genetical rearmament of racism by the Boston professor will doubtless be enthusiastically greeted by the Klu-Klux-Klanners and the bloody butchers of the heroic Korean people. The "genetical method" proposed by Boyd to determine six races, agreeing with the results of skin color—that is the priceless gift of the American Morganists to American fascism.

WILLIAM C. BOYD

School of Medicine
Boston University

BELIEVE it or not, the "Lament of a Moneyed Man" (SCIENCE, **113**, 333 [1951]) has found its way into the Soviet press, where it has been reproduced, in part, under the title "Science in the American Style," with a subtitle "Mister Babbitt Seeks Entry into the Pantheon of Science" (*Liter. Gaz.,* (141), 4 [1951]).

Bykhovskiĭ, who expatiates for the Soviet reader on this playful letter to SCIENCE, reports it as coming from an "enraged New York businessman" and says: "There are few scientific treatises which reveal the very essence of bourgeois *Weltanschauung* with such conclusiveness; there are few pamphlets which describe the 'American way of thinking' with such clarity as does this short letter from one of the representatives of the ruling class of the United States of America."

A moneyed man's whimsical suggestion that, because in one week he earns more money than Gibbs did in a year he should therefore have 52 busts in the Hall of Fame to match Gibbs' one, arouses supreme disgust: "That's how the present bosses of America assess the value of science. A statue of Mister Babbitt amid the ruins of American culture!"

Innocent whimsey has thus been put to the service of a propaganda without principle and made to contribute to the systematic defamation in the Soviet press of all things American.

IVAN D. LONDON

Russian Research Center
Harvard University

Lytic Effect of Tygon Plastic Tubing

NORMALLY, chicken red blood cells can be kept without hemolysis for a week or longer. During the course of immunogenetical studies of the red blood cellular antigens in the chicken, hemolysis of the cells of some of the blood samples occurred within 1–2 days after collection. The cause of this premature lysis was found to be associated with the Tygon Plastic Tubing (Formulation S22-1) used as part of the apparatus for the storage of the salt solution.

Several experiments were carried out in which the salt solution (2% sodium citrate, 0.42% sodium chloride) was held in Tygon tubing for periods of 8–26 days. All blood subsequently collected in glass tubes, each containing 1–3 ml of solution, turned dark within a few minutes, and hemolysis began in approximately half of the samples within 18 hr. Retention of the salt solution in Tygon tubing for a period of 24 hr was sufficient to cause some lysis. However, simply running the solution through the tubing did not produce this effect. It was also found that the concentration of the salt solution, up to 2.2% of sodium citrate and 0.5% of sodium chloride, was not responsible for the hemolysis.

When the "contaminated" solution was allowed to remain in contact with red blood cells for 30 min at room temperature and then separated from them by centrifugation, it lost its lytic properties: fresh blood cells added to such a solution were not lysed.

"Contamination" of the solution occurred when 1″ strips of tubing were immersed in small amounts of the solution for 10 days prior to collection of the blood. However, if the pieces of Tygon tubing were thoroughly scrubbed with soap and water, no noticeable effect on the solution was obtained. Boiling long lengths of tubing (10 min) or washing the inside of the tubing with soap and water without scrubbing

failed to prevent subsequent "contamination" of the salt solution.

The cells of a bird collected at different times did not react uniformly to the same solution. Limited experiments also indicate that there may be individual differences among birds in susceptibility to lysis. The nature of the specific contaminant has not been determined.

FRED T. SHULTZ

Division of Poultry Husbandry
University of California, Berkeley

The Language of Science

I CANNOT help wondering whether the current disputants about the language problem in science have not rather lost their sense of historical perspective. This problem has only existed for about 300 years, which is a minute slice of history. Prior to that time the acquisition of four languages—Latin, Greek, Hebrew, and Arabic—placed the literature of the then known world at the disposal of the scholar. Probably 90 per cent of all scholars used only Latin.

If Latin were reintroduced as a universal language in science it would solve many of the problems raised by your correspondents: (1) There already exists a considerable volume of literature in Latin. One of the objections to the introduction of a synthetic tongue is the innumerable arguments that would immediately arise as to style. (2) The language is not spoken by any living group today, so that no national feelings would be hurt by its adoption.

The suggestion that Latin is inadequate to express the needs of science could only be made by one totally unacquainted with philology. Every language is continuously adapting itself to the needs of the civilization in which it is used, and Latin is just as flexible as any other tongue. I agree with Professor Faegri that every contemporary worker would continue to have to learn English, French, and German—in my field Spanish and Italian are almost as important—but I do not see why we should insist on passing on to our descendants the curse of Babel which fell on our ancestors. Five hundred years from now the scientific literature of part of the sixteenth and almost all of the seventeenth, eighteenth, and nineteenth centuries would be regarded by scientific historians as a specialized field to be avoided by those not linguistically inclined. Anything of truly permanent value would, of course, by that time have been translated into Latin.

PETER GRAY

Department of Biological Sciences
The University of Pittsburgh

THE discussion about language problems in science is of more than purely academic importance. My mother language is a "small" one, and I had of course to learn English, French, and German well enough to speak and write them. I certainly would not like to have to learn a fifth language, Esperanto (Lincicome, D. R. SCIENCE, **113**, 607 [1951]), which, by the way, would not give me the great pleasure that English, French, and German gave me, of enjoying a firsthand knowledge of foreign literature. I therefore agree entirely with Knut Faegri's ideas (SCIENCE, **114**, 399 [1951]).

I think, however, that something should be done. I know by personal experience how difficult it is to have every Italian graduate student master English and German well enough to get acquainted with genetic literature, and how American graduate students would rather not read German papers on the subject. In the past, science had an international language: Latin. Certainly I am not going to advocate the revival of this language.

What I think should be done is this: (1) let Unesco organize, through national committees and learned societies of each country, a poll to find out what modern language should be chosen as the "language of science;" (2) let the nations belonging to Unesco agree to have the teaching of this language compulsory at higher educational levels; (3) let every learned society in the world agree that every original contribution, experimental or otherwise, is going to be preferred for acceptance in its proceedings if written in the "language of science;" (4) let the editors of scientific journals do the same.

Such provisions would not be likely to produce immediate results; but after a decade or so every scientist would know that his discoveries would be bound to be ignored unless written in the accepted language; a young scientist would have to learn no foreign language if he is lucky enough to have the official language as his mother tongue, or just one if he lives in other countries. Knowledge of other languages would still be necessary for the old scientific literature, but the importance of this would decrease with time, and translations of the important papers into the "language" could be prepared.

This would not necessarily mean the death of every national scientific literature. Textbooks and general articles would still be written in the local language. Probably a smaller total output of scientific papers would be the end result, and this would certainly be welcomed. The original contributions, however, would become easily available to the whole world.

As to the language to be chosen, I for one am all in favor of English: It is already being used by the largest number of living scientists; it is well suited to the compactness of scientific language; there are already scientific journals being published in English by non-English speaking countries, such as Sweden. Last but not least, I know English already and I cannot be accused of linguistic nationalism by making such a proposition.

A. A. BUZZATI-TRAVERSO*

Universitá di Pavia, Italy

* Visiting professor, Department of Zoology, University of California, Berkeley.