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DISREGARD OF SOVIET METEOROLOGISTS' INVENTIONS

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(Soviet Editor's Note: The editors of this periodical do not agree with the author's treatment of the examples cited, although the problems discussed are timely and well-founded. The editors request that the readers take part in discussions of these specific problems and similar problems in other fields of geophysics, meteorology, and hydrology.)

Among Soviet meteorologists, there are still those who disregard Soviet accomplishments in meteorology and are subject to foreign influence. The influence of these meteorologists is reflected in the following examples:

Of the two heliographs which were used in the Soviet Union, the heliograph designed by the Soviet scientist Velichko was removed for no reason whatever from station equipment and was replaced by the British Campbell heliograph. The latter, which is expensive (2,500 rubles), difficult to put into domestic production (the large glass globe was imported up to World War II), and complex in exploitation, soon became the only heliograph in the USSR. The Velichko heliograph, which is simple and easy to produce and use, was not only forgotten, but was destroyed.

There are technical defects in both instruments, but the defects in the British instrument are considerably more serious, the main one being that its operating principle is static, while the photographic principle upon which the Soviet instrument is based, considering the accomplishments of photochemistry, has a great future. It is also much easier to supply the proper paper for the Velichko instrument than to supply tape for the British instrument. The British instrument should be used only in remote and high-mountain stations where light-sensitive paper cannot be supplied regularly. At present, the Soviet instrument is not operating because it has been removed from the equipment of stations, while the British instrument has not operated for many years because of the lack of tape.

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Another example is the introduction into the network of stations of rain gauges with a Nifer shield without any consideration for the climatic characteristics of the USSR. Useless but harmless in the case of liquid precipitation, the Nifer shield becomes harmful in winter, since it does not prevent snow from being blown out of the rain-gauge bucket. Because of this, the belief that precipitation has a definite yearly behavior with a summer maximum and a winter minimum has been strengthened.

The Soviet meteorologist, A. S. Skipskiy, worked for many years on the study of precipitation and in 1932 proposed an original improved design of a rain-gauge instrument which prevented snow from being blown out of the bucket. Parallel observations on snow-cover depth and snow surveys made by Skipskiy led him to propose that the "winter minimum" of precipitation was a mistaken conclusion caused by the use of data from rain gauges with the Nifer shield. This sudden reversal of ideas on the precipitation regime was received skeptically, and also prejudiced the attitude towards the instrument itself. The network of stations continued to be supplied with the obviously useless foreign model with the Nifer shield, while Skipskiy's invention was forgotten. The shield proposed by B. D. Tret'yakov was not approved for a long time; now that it is approved, mass replacement of the Nifer shield is still not being carried out and, moreover, the Nifer shield is still being produced at plants of the Hydrometeorological Service and sent to stations.

The Hellman pluviograph is being produced by plants and distributed to the network of stations of the Soviet Union. The single merit of this instrument is large-scale recording, but it also has many important defects. Up to this time, the Berg pluviograph has not been given the application which it deserves, although it could successfully replace the foreign model.

The Central Construction Bureau of the Main Administration of the Hydrometeorological Service is working to improve the foreign Dines pluviograph, which is even more complex than the Hellman model.

The simple and original V. A. Mikhel'son actinometer has found worldwide use, but the Soviet Hydrometeorological Service, strangely enough, imports copies of this instrument since production of it has stopped in our plants.

Another example is the psychrometric booth designed by the Soviet meteorologist V. V. Kuznetsov. Comparison of thermometer readings in this booth with an Assmann psychrometer and other booths gave good results, but it has not obtained wide usage, and the British Stevenson booth continues to be distributed to the network to this time. The only reason for leaving the British booth in our network would be standardization of equipment throughout the world, but since each country supports its own system there is no basis for disregarding the Kuznetsov booth.

Kuznetsov also designed a nephoscope which is very simple and has a wide range for obervations, but this instrument has also been disregarded. The comb nephoscope is used in the network instead of the Soviet instrument in the interest of economy, but at the expense of quality. Excuses regarding the expense of the Kuznetsov instrument are not quite convincing, inasmuch as the very expensive Campbell heliograph was introduced into the network.

There is no doubt that the instruments designed by Velichko, Berg, Skipskiy, etc., require improvements and additions since they were proposed many years ago, but such improvements can be made if the Hydrometeorological Service fulfills its primary task, i.e., reconsideration of the technical possibilities of Soviet meteorology and encouragement of the work of Soviet scientists and inventors.

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