evaporation the animals encyst. The dried-up culture is left exposed for one or two days, when new hay infusion is added. The animals, having divided within the cysts, revive and are found in greatly increased numbers. This drying-up process can be repeated until a more or less concentrated culture of the organisms is obtained. The concentrated culture of organisms is then pipetted into a petri dish in which a piece of ordinary filtered paper, cut so as to exactly cover the bottom of the dish and moistened with hay infusion, is placed. The petri dish is then left uncovered to slowly evaporate. The filter paper, with the encysted organisms on it, when thoroughly dry can be cut into small pieces and kept indefinitely.

To start fresh cultures, pieces of the filter paper are put into watch glasses or other containers and hay infusion added. In a short time the animals revive and new cultures of the original are thus obtained.

This method of keeping stock cultures seems to be especially adapted for schools and colleges where only a limited amount of time is devoted to the Protozoa and where no time for the ordinary culture preparation work is available.

JOSEPH H. BODINE

ZOOLOGICAL LABORATORY,
UNIVERSITY OF PENNSYLVANIA

QUOTATIONS

THE BRITISH COMMITTEE FOR AIDING MEN OF LETTERS AND SCIENCE IN RUSSIA[1]

WE have recently been able to get some direct communication from men of science and men of letters in North Russia. Their condition is one of great privation and limitation. They share in the consequences of the almost complete economic exhaustion of Russia; like most people in that country, they are ill-clad, underfed, and short of such physical essentials as make life tolerable.

Nevertheless, a certain amount of scientific research and some literary work still go on. The Bolsheviks were at first regardless, and even in some cases hostile, to these intellectual workers, but the Bolshevik government has apparently come to realize something of the importance of scientific and literary work to the community, and the remnant—for deaths among them have been very numerous—of these people, the flower of the mental life of Rusia, has now been gathered together into special rationing organizations which ensure at least the bare necessaries of life for them.

These organizations have their headquarters in two buildings known as the House of Science and the House of Literature and Art. Under the former we note such great names as those of Pavlov the physiologist and Nobel prizeman, Karpinsky the geologist, Borodin the botanist, Belopolsky the astronomer, Tagantzev the criminologist, Oldenburg the Orientalist and permanent secretary of the Petersburg Academy of Science, Koni, Bechterev, Satishev, Morozov, and many others familiar to the scientific world.

Several of these scientific men have been interviewed and affairs discussed with them, particularly as to whether anything could be done to help them. There were many matters in which it would be possible to assist them, but upon one particular they laid stress. Their thought and work are greatly impeded by the fact that they have seen practically no European books or publications since the Revolution. This is an inconvenience amounting to real intellectual distress. In the hope that this condition may be relieved by an appeal to British scientific workers, Professor Oldenburg formed a small committee and made a comprehensive list of books and publications needed by the intellectual community in Russia if it is to keep alive and abreast of the rest of the world.

It is, of course, necessary to be assured that any aid of this kind provided for literary and scientific men in Russia would reach its destination. The Bolshevik government in Moscow, the Russian trade delegations in Reval and London, and our own authorities have therefore been consulted, and it would appear that there will be no obstacles to the transmission of this needed material to the House of Science and the House of Literature and Art. It can be got through by special facilities even

[1] From *Nature*.

under present conditions. Many of the publications named in Professor Oldenburg's list will have to be bought, the costs of transmission will be considerable, and accordingly the undersigned have formed themselves into a small committee for the collection and administration of a fund for the supply of scientific and literary publications, and possibly, if the amount subscribed permits of it, of other necessities, to these Russian *savants* and men of letters.

We hope to work in close association with the Royal Society and other leading learned societies in this matter. The British Science Guild has kindly granted the committee permission to use its address.

We appeal for subscriptions, and ask that cheques should be made out to the Treasurer, C. Hagberg Wright, LL.D., and sent to the British Committee for Aiding Men of Letters and Science in Russia, British Science Guild Offices, 6 John Street, Adelphi, London, W.C.2.

Montague of Beaulieu,
Ernest Barker,
E. P. Cathcart,
A. S. Eddington,
I. Gollancz,
R. A. Gregory,
P. Chalmers Mitchell,
Bernard Pares,
Arthur Schuster,
C. S. Sherrington,
A. E. Shipley,
H. G. Wells,
A. Smith Woodward,
C. Hagberg Wright.

SPECIAL ARTICLES

STAR-TIME OBSERVATIONS WITH AN ENGINEER'S Y-LEVEL

Desiring a check on a pendulum clock belonging to the Physics Department of the University of the Philippines. independent of the time-ball of the Manila Observatory, I have been led to use the following makeshift device.

In Fig. 1, O is the objective of an engineer's Y-level; B_1 a wooden block fitted over the objective, with a hole bored through; B_2 a small piece of board nailed to the block B_1; P is a 45° 1-inch prism fastened to B_1; L is

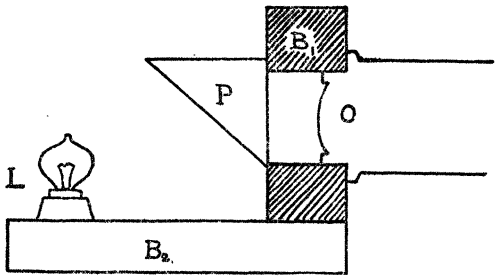

Fig. 1.

a small electric lamp. The whole attachment is tilted forward a little so that when the axis of the telescope is horizontal axial rays do not come by reflection from the zenith, but from a point about 2°or 3° from the zenith. Stray light from the little lamp L illuminates the fields so that the cross hairs are clearly seen. Two somewhat stale dry cells on the floor give enough light, but not so much as to drown the image of a fourth magnitude star. A small switch is included in the circuit.

When the instrument is set up and levelled, with no current on, the images of stars about 2° to 4° from the zenith are seen in different parts of the field; if the telescope is rotated about the vertical axis these images describe arcs of circles across the field, Fig. 2. If these arcs have horizontal chords from side to side of the circular field, Fig. 3, the prism is adjusted, *i.e.*, the rays coming down to the prism, their reflections into the telescope, and the vertical axis of rotation are in the same

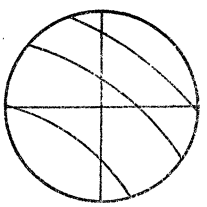

Fig. 2.

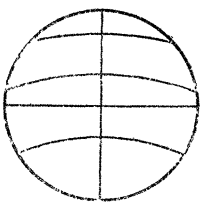

Fig. 3.

plane. This adjustment is convenient, but can not be made very exact; it is done by