

water. Each of the gauges is 40 in. in depth. The rainfall alongside them is measured by an ordinary 5-in. Snowdon rain-gauge. The total rainfall recorded for the year 1921 was 17.86 in. In 1920 it was 32.25 in.; the average is probably about 30 in., but we have not yet obtained a record over a sufficiently long period to establish a trustworthy average. No. 1 drain-gauge is unmanured, and the figures quoted below refer to it. The drainage for the year from this gauge was 4.93 in. No drainage at all came through from early June to nearly the end of October, and during seven months, from the middle of May to the middle of December, the total drainage was 0.046 in., or less than one-twentieth of an inch. On the other hand, in 1920, when the rainfall was 32.25 in., the drainage was 18.09 in., and there were only two months, July and August, when there was no drainage.

In many parts of this district springs failed which were never known to have failed before, and there was great difficulty in many places in obtaining a sufficient water-supply. The reason for this is apparent when we find that from the middle of May until the end of the year practically no water passed through the subsoil.

Although the total rainfall for the year was so low, it was well distributed throughout the year and rain fell in every month. Quite a good crop was grown upon Craibstone Farm. The drain-gauges themselves as well as the surrounding field were under turnips, and both yielded a good crop.

The year 1922 so far as it has gone provides a great contrast to 1921. During the month of January more drainage came through No. 1 gauge than during the whole of the previous year. The rainfall recorded was 5.61 in., while the drainage from No. 1 gauge was 5.69 in. There were only two days during the whole month on which rain or snow was not recorded. The underground water-supplies are now being well replenished, and, although all the springs have not yet responded, there is no doubt that after the rainy month of January they should soon begin to recover.

JAMES HENDRICK.

Agricultural Department, Marischal College,  
Aberdeen, February 3.

#### Scientific Literature for Russia.

At the beginning of last year a British committee was formed with the object of sending books and other publications to men of letters and science remaining in Russia.

The committee was assured that any such works, if addressed to the House of Science or the House of Literature and Art in Petrograd, would reach their destination and would be much appreciated by literary and scientific men meeting there who were cut off from the intellectual life of the rest of the world.

An appeal was therefore made for funds to purchase works of a non-political type for dispatch to Petrograd, and Prof. Oldenburg, permanent secretary of the Academy of Sciences, furnished a list of books and other publications much needed by Russian savants. The books particularly desired were those which included accounts of current problems and developments of pure and applied science.

As the result of this appeal the sum of 448l. 17s. 5d. was subscribed, and several scientific societies, including the Royal Society, entrusted the committee with their publications for transmission to Petrograd. The Russian Trade Delegation undertook the dispatch of the books, and ten cases have been forwarded.

Prof. Oldenburg, writing on December 21 last,

expressed the deepest gratitude of scientific workers in Petrograd for this stimulating intellectual aid, and says that they have been placed in a special reading-room at the House of Savants, where they are consulted by a large number of students throughout the day, and have been the means of reviving scientific interests and work. He sends the most cordial thanks of men of science in the city to all who have contributed towards the stimulus to scientific investigation which the new publications have given them.

Having thus established contact with scientific men in Russia and enlightened them as to the progress of research from which they have been separated by political circumstances beyond their control, the committee is of the opinion that its task has been accomplished. Of the fund remaining in its hands the sum of 50l. has been expended upon books desired by the University of Latvia, and a small balance will be handed over to the Universities Committee of the Imperial War Relief Fund.

The committee gratefully acknowledges the generosity of the response to its appeal, and believes that the intellectual relief thus afforded will do much to strengthen Russian scientific life.

A statement of accounts, audited by Messrs. W. A. Browne and Co., chartered accountants, will be sent to anyone who desires a copy.

R. A. GREGORY,

Chairman.

C. HAGBERG WRIGHT,

Hon. Secretary and Treasurer.

British Science Guild Offices, 6 John Street,  
Adelphi, London, W.C.2, February 11.

#### Cyclic Conditions and Rejuvenation in Hydroids.

SEVERAL colonies of *Tubularia indivisa* which have lived in the aquaria for three years are noticed as exhibiting alternating periods of activity and rest. Broadly speaking, the hydranths die off about midsummer and reappear about midwinter, the times in one particular case for the growth of new lengths of hydrocaulus and for the formation of new hydranths being December, 1919, January, 1921, and January, 1922, and in another January, 1920, January, 1921, and December, 1921, the hydranths in each case finally dying off in the intervening periods between the end of May and July. Colonies obtained from moderate depths in January generally show clearly marked new ends to their hydrocauli, such new growth often being an inch or more in length.

At the same season died down colonies of *Stauridium* and *Melicertidium* in the aquaria, and *Clava*, *Syncoryne*, *Campanularia*, *Antennularia*, *Plumularia*, *Halecium*, etc., in the sea are found showing signs of rejuvenation.

In a paper on "The Effect of Hydrogen-ion Concentration and Oxygen Content of the Water on Regeneration and Metabolism in Tadpoles" (*Journ. Exper. Zool.*, 1920), M. E. Jewell shows that rate and amount of regeneration increase with increase of oxygen content of the water, but decrease with decrease in temperature, and that the optimal  $P_H$  for regeneration is at or near neutrality. In connection with these experimental results it is interesting to note that the above regenerations begin when the sea temperature is approaching its minimum, at which time the oxygen content is greatest, and continue with increasing rapidity during spring, when increasing alkalinity further stimulates growth and an ever-increasing food supply is available.

In view of our incomplete knowledge of the interrelations of physical factors in the sea it is extremely