Ringwood which the limnology classes in Cornell University have frequently for many years. Negotiations for the acquisition of this property have now been completed and this preserve will be known as the Lloyd-Cornell Ringwood Wild Life Preserve.

The Ringwood Preserve lies about 7 miles to the east of Ithaca. It comprises an area of slightly over 110 acres. Situated in the midst of rolling wooded hills, it lies at an elevation of about 1,600 feet. Being of morainic origin the glaciers upon receding have left a series of pot holes which are furnishing some very interesting situations for biological studies. One of these pot holes, known as Winterberry pond, seems to be spring fed and retains approximately the same amount of water the year round. The other pot holes have water in them intermittently. In the spring when the snow begins to melt, the water collects in them to a depth of from 5 to 12 feet, while during the late summer the water becomes lower and lower until in the fall the water disappears entirely. Just to the east of the preserve is found a sphagnum bog which offers a variety of biological forms for study.

The life which is found in these temporary pot-hole pools forms an interesting succession study. Every spring during the latter part of April and the early part of May these temporary pools are fairly alive with the beautiful fairy shrimps, *Enbranchipus gelidus*. Coming back to these pools a week or two later not a single specimen of the fairy shrimp will be noticed. However, another crustacean, *Limnetes gouldii*, is found to be just as abundant as was the fairy shrimp a few weeks previously.

Mr. W. C. Senning, instructor in the department of zoology, has made a study of the plant and animal life of these pools during the last three years so that we have a good beginning of a systematic study of the life in this preserve.

With these three Wild Life Preserves made possible through the generosity of Mr. C. G. Lloyd, Cornell University will always have an opportunity of studying plant and animal life in situations where artificial interference by man has been reduced to a minimum.

P. W. CLAASSEN

CORNELL UNIVERSITY

ÅNGSTRÖM IN ENGLISH

Is it not unreasonable to muster the letter E, as appears imminent, into duty for almost any vowel? Something may be said for the simplification achieved in using E for the sounds represented in the original German, Swedish, etc., by Ä (or in Latin by AE). But it seems to be overdoing the point to render the ō sound of the Swedish letter Å with an E, as is done (through a misprint?) in "engstrom units" appearing above the name of Alfred F. Hess on page 334 of SCIENCE (March 30, 1928). Preservation of the original spelling of Ångström's name is perhaps too much to expect, especially of American typewriters. Nevertheless, to convert it to *engstrom* is unduly to succumb to a somewhat prevalent ignorance of the fact that *ongstrum* is in English the nearest phonetical rendering of the physicist's name (cf. Webster's New International Dictionary). Perpetuating the error fails to simplify international scientific intercourse.

E. F. B. FRIES

EMBRYOLESS SEEDS IN CEREALS

OF interest in connection with the theory of double fertilization in angiosperms is the discovery of embryoless seeds in wheat, rye and bald barley. Such seeds develop endosperm which is perfectly normal, but they show no trace of embryo tissue. The abnormality is not apparent on casual observation, but upon closer examination the lack of embryo is evidenced by a depression at the proximal end of the seed. Microscopic examination of sections also shows embryo tissue and the epithelial layer to be absent.

Pope and Harlan reported the occurrence of five barley seeds in which the embryo was entirely lacking among many thousands examined. The writer finds that embryoless seeds occur in wheat in the proportion of approximately 0.1 per cent. Sufficient additional work has been done to indicate that this same proportion holds true for both bald barley and rye.

MILDRED E. LYON

BOTANICAL SECTION,
COLORADO EXPERIMENT STATION

THE HOST OF THE BROAD TAPEWORM

THE recent article by Vergeer[1] prompts me to call attention to my experiments on *Diphyllobothrium latum* (the broad tapeworm) which was published in *Minnesota Medicine*, October 1927, page 614. Since my report was the first demonstration of the fact that North American fishes act as hosts for this worm, Vergeer's report may be looked upon as confirmation of my findings. In my report it was indicated that I had evidence of the fact that there was an endemic area in and about Winnipeg, Manitoba. Since then I have obtained wall-eyed pike from Lake Winnipeg and have found larvae in a great percentage of them, which when fed to dogs produced typical tapeworms of the species *D. latum*. The importance of this is apparent when one learns that a great proportion of the wall-eyed pike sold in the middle western markets comes from Canadian Lakes and that a large proportion of

[1] The *Journal of the American Medical Association*, 90: 673–678.

the fresh fish sold on the Winnipeg market comes from this lake.

A full report of my investigations will be published shortly.

THOMAS B. MAGATH

MAYO CLINIC,
ROCHESTER, MINN.

SCIENTIFIC BOOKS

Crystallographic Tables for the Determination of Minerals. By VICTOR GOLDSCHMIDT (Heidelberg) and SAMUEL G. GORDON (Philadelphia). Philadelphia, Pa., Special Publication No. 2, The Academy of Natural Sciences of Philadelphia, 77 pp., 4 figs., 16 tables, 1928.

THIS is a complete presentation of the most modern methods of dealing with crystal identification by means of two-circle goniometric measurements. In earlier days Professor Federov, of Petrograd, Russia, wrote a "Dictionary of the Mineral Kingdom," which has been published by the Petrograd Academy of Science. This work is a sort of crystallo-chemical analysis of over ten thousand compounds, both organic and inorganic, which had been previously investigated as to crystallographic details; but unfortunately it is much involved with Ferderdov's theories of crystal structure.

The present work is intended for treatment of the unknown crystal which has been measured on the two-circle goniometer. It is very concise. First, it is necessary to identify the crystal system to which the unknown crystal belongs; then its complete identification is accomplished by means of the angles and polar elements as given in the tables. These tables are especially useful because any normal orientation of the crystal will give sufficient data for identification.

Since isometric crystals can not be distinguished from one another by crystal measurement, they are arranged according to luster, then by chemical composition, and lastly according to increasing specific gravity. The tetragonal minerals are arranged according to tangent relations, orientation with reference to either first or second order prism position being allowed for. For the orthorhombic crystals we may use either the linear or polar elements, the tangent or the cotangent. In this connection a supplementary table (Table 7) is used to make the work more complete for every possible orientation. Monoclinic minerals are classified according to prism angles and tangents of these, since the prism zone usually can readily be identified. Triclinic crystals are listed according to projection elements, polar elements and linear elements, and a special table is also provided to aid in correct orientation.

In every table there are cross references to other tables. The index at the end of the book refers directly to the minerals, of which a total of 1,710 species are listed. The book should be very useful to crystallographers in general.

ALFRED C. HAWKINS

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

AN EFFICIENT DEHYDRATING APPARATUS FOR GENERAL USE[1]

SOME animal tissues are very difficult to dehydrate without disastrous shrinkage, which is due to sudden changes in alcoholic concentration. Many devices have been prepared to overcome this problem, with various degrees of success. While searching for a method which was easy to procure, simple to operate and sure of positive results, the apparatus here figured has proved very efficient. While designed especially for the dehydration of plant nematodes, excellent results were also obtained with other animal and plant tissues preparatory to embedding and sectioning. As its application seems quite general, it is hoped that its use may prove as beneficial to workers in other fields as it has here the past months.

The apparatus is made by using a separatory funnel (1) to which is welded a lead tube which in turn is bent up and welded into the end of a small test-tube (5), thus formed into the magazine tube. Near the top of the test-tube is inserted the overflow tube (2), which is bent down and drawn out at its end. It will be noted that the insertion of this tube is on a level, or a bit above, with the stop-cock of the separatory funnel, so the apparatus can not run dry. The unattached end of the magazine tube is left open for ease of loading and unloading of material to be dehydrated. Evaporation is minimized by placing a cork in this open end. At the bottom of the bend in the lead tube, a drain tube (9) is welded in, which is fitted at its open end with a glass stop-cock. This allows for quick and complete drainage when an entire change of fluids is desired. All rubber connections are avoided, so there would be no difficulty when such fluids as xylol are to be used. The glass used is Pyrex, due to the fact that soft glass is hard to manipulate, especially in burning the necessary holes through the magazine.[1]

As used by the author, the entire apparatus is mounted on a ring stand by using suitable clamps

[1] The author is indebted to Mr. George Pettengill, of the Oregon State Agricultural College, department of chemistry, who made many valuable suggestions and did the glass work for the apparatus.