

cygnonum, Nees., a native of Australia and New Zealand. This species was reported only twice previously on March 18, 1917, near San Diego, California, and on September 5, 1917, on a wool-waste dump at North Chelmsford, Massachusetts.

An interesting observation regarding the blooming of this species was that while the flowers of *E. cicutarium* were withered and fallen by eight or eight-thirty o'clock on bright mornings, the flowers of *E. cygnonum* were only half opened at that time and they persisted till about one o'clock in full sunshine.

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PROTECTION OF THE TUMION IN FLORIDA

OUR national monuments should be protected before it is too late. Lack of a state forestry policy and the rapid disappearance of so much natural beauty in many states are already causing much alarm. Beautiful sights along lakes and mountains are denuded, and our immense forests are destroyed for the lumber trade, without any attempt to renew them on a technical basis. These facts are known throughout the world. Quite recently the Count of Schwerin and Freiherr von Thielmann, both in Berlin, have drawn attention to this fact to foresters and scientists in European countries. They stressed the disappearance of the beautiful forests in the United States.

It becomes of international importance when certain forest species become extinct. Such a forest is found along the bluffs on the east bank of the Apalachicola River from Chattahoochee to Bristol in the northwestern part of Florida. Along a distance of hardly seven miles we find some extremely rare trees, namely, *Tumion taxifolium* Greene and *Taxus floridana* Chapm. Both are coniferous trees; the former reaches a height of 30 to 40 feet and the latter becomes rarely 25 feet high. No doubt both are relicts of ages long past, when a considerable part of the country was covered with these and perhaps other related species.

When the glacial periods came over a large portion of this country and over Europe and Asia, the geographical distribution of these plants was gradually pushed back to some protected and favorable areas along the Apalachicola River. These rare trees are generally used in this region as Christmas trees, thus hastening their disappearance in their natural environment.

I urgently ask those who are interested in the rare forest flora of that small area along the Apalachicola River to have this region protected as a national

park. It will be of great benefit to science to have this place as a natural monument that will be cared for throughout the ages. If no immediate steps are taken but a very few years will elapse before that section will be completely denuded of all its natural beauty.

The United States, when we consider its large area, is not too rich in protected natural monuments nor in national parks. Its forest destruction goes on day by day without proper management. We could not do better than to repeat the words of Baron Ferdinand von Müller: "I regard the forest as a heritage given to us by nature, not for spoil or to devastate, but to be wisely used, reverently honored and carefully maintained."

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POLEMONIUM SEEDS

DURING some years I have been engaged in genetical work on the genus *Polemonium* (Polemoniaceae) which seems well fitted for studies of that kind. By means of the seed catalogues of the Botanical Gardens of the northern hemisphere I have got numerous collections of seeds supposed to represent a rather large number of species, but growing experiments showed that under the many names really only few species were present, the identifications in many cases being erroneous.

As most of the species occur in North America it is difficult for a European botanist to get seeds from wild-growing specimens, and therefore, I ask American botanists to help me by collecting seeds of species which they may come across and send them to me. I shall be very grateful for such assistance.

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SCIENTIFIC BOOKS

Elements of Astronomy. By E. A. FATH. VIII + 307 pp., 191 figures. McGraw-Hill Book Co., N. Y. Price, \$3.00. 1926.

And still they gazed and still their wonder grew,
That one small head could carry all he knew.

THE reader of Professor Fath's "Elements of Astronomy" is left in much the same frame of mind as were the rustics of the "Deserted Village" after contemplating their schoolmaster. In a book of slightly less than three hundred pages of text we find the elements of practically everything that had been accomplished in astronomy up to the end of 1925. The book should receive a hearty welcome from teach-

ers of astronomy and readers who desire a "non-mathematical treatment of the science of the stars."

The subject-matter of the book is very comprehensive and all fields of astronomy are touched upon. In general the author has preserved a good sense of balance and proportion and has not overemphasized certain fields at the expense of others. In the attempt to preserve the non-mathematical character of the book we find the descriptive method of presentation employed rather than the analytical. For the same reason, and also for the sake of brevity, the style of the text is rather dogmatic and in many cases simple proofs of statements are omitted.

The various controversial points in astronomy are well handled. All sides of the various questions are presented, in so far as space will permit, and the reader is left to draw his own conclusions from the material presented. In some cases Professor Fath does indicate the conclusions which he or others have reached, but he does not attempt to force these opinions upon the reader.

The physical make-up of the book itself is excellent. The binding is substantial and the paper of a quality capable of taking a good impression from the type and cuts, and also capable of withstanding the rough handling of the undergraduate. The type is clear and legible and the numerous cuts are admirably executed. Furthermore, the text is remarkably free from the annoyances of typographical errors which so frequently mar first editions.

After so much praise, a few words of criticism may not be out of place. In the attempt to avoid too lengthy a treatment for a first course some material has been omitted which will seem to many teachers as very important. The fields of spherical and practical astronomy have suffered the most severely. For example: the chapter on the celestial sphere, while it does contain all important definitions expressed very clearly, does not contain any reference to the simple methods for converting from one system of coordinates to another. The same criticism may also be applied to the excessively brief section on time. It also seems unfortunate that the fundamental problems of practical astronomy concerned with navigation should be merely mentioned in the introductory chapter and that no mention should be made of that important instrument, the sextant. Throughout the text dates are given and reference made to original discoverers, but little or no attempt is made to show the tremendous influence of astronomical discoveries on the history of civilization or upon the other sciences. Such material might well be substituted for the weak sections upon such subjects as the theory of relativity and atomic theory.

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SCIENTIFIC APPARATUS AND LABORATORY METHODS THE CULTIVATION OF ENDAMOEBA HISTOLYTICA

IN an endeavor to simplify the culture medium of Boeck and Drbohlav¹ for the cultivation of *Endamoeba histolytica*, the cause of amoebic dysentery, which has proven so successful for that purpose, the following culture medium has been found even more successful, in that the amoebae live for a longer period of time in it and grow to a much greater size. It is a fluid medium, unlike all other media that have been proposed for the purpose, and possesses the advantages of markedly inhibiting bacterial growth, simplicity of preparation, and greatly facilitating researches on the effect of chemical agents upon the amoebae.

As used in this laboratory the medium is prepared as follows. The Locke solution used has the following formula:

Sodium chloride	9.00 gm.
Calcium chloride	0.24 gm.
Potassium chloride	0.42 gm.
Sodium bicarbonate	0.20 gm.
Dextrose	2.50 gm.
Distilled water	1000 cc.

This solution is filtered and autoclaved at fifteen pounds pressure for fifteen minutes, and allowed to cool. To it is then added one part of inactivated human, horse or rabbit blood serum to each seven parts of the Locke solution used. After adding the blood serum the whole is thoroughly shaken and filtered through a Mandler or Berkefeld filter. Sometimes it is necessary to filter through two or more candles before the filtrate is perfectly clear. After filtration the medium is tubed, placing 5 cc in each suitably sized test-tube, and incubated for twenty-four hours at 37° C. If found sterile the tubes should be kept in an incubator at 37° C. until used. The reaction of the medium does not need adjusting, as it is always favorable for the growth of the amoebae when first prepared. Inactivation of the blood serum is necessary and we have found that human blood serum gives the best results, with horse and rabbit serum followed in the order named.

The medium is inoculated by placing a loopful of the feces to be examined in the medium and breaking it up thoroughly with the inoculating loop. After inoculation the tubes are placed in an incubator at 37° C. for twenty-four hours and a small portion of the sediment at the bottom of the tube examined at the end of that time. The amoebae will always be found in the sediment, and usually occur in

¹ Boeck, W. C., and Drbohlav (1925), *Am. Jour. Hyg.*, V. 371.