

The report is an example of the value of the methodical collection of data. Whether the destruction or control of *Glossina*, which seemed at first sight an almost hopeless quest, can be achieved by this method we shall no doubt soon learn.

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### Dante and Trepidation.

IN a note entitled "La trepidazione in Dante?" (Atti della R. Accad. di Torino, vol. lii., p. 353) Signor O. Z. Bianco discusses the novel interpretation given by Duhem ("Le Système du monde," t. iv., chap. x.) of a well-known passage in the "Paradiso" (xxvii., 142-48):

But ere that January pass to spring  
 Though that small hundredth men neglect below,  
 These higher spheres shall with loud bellowings ring;  
 The tempest fierce, that seemed to move so slow,  
 Shall whirl the poops where now the prows we see,  
 So that the flier shall on its right course go;  
 And following on the flower, the true fruit be.  
 (Plampin's translation.)

The first two lines clearly allude to the difference between the Julian year and the true value of the tropical year, which Dante assumed equal to 1/100 day, the neglect of which was gradually making the spring equinox occur earlier, and would (if the error were not corrected) eventually make the spring begin in January. Duhem suggested that the second half of the passage alludes to the so-called trepidation of the equinoxes. According to the theory formulated by Tâbit ben Korra in the ninth century, the equinoxes do not move uniformly from east to west, but alternately advance and recede in a period of more than four thousand years. This imaginary phenomenon is not alluded to by Al Fargani, from whose text-book Dante seems to have derived his astronomical knowledge. Signor Bianco rejects Duhem's suggestion, which is at variance with what Dante says elsewhere ("Convito," ii., 6; "Purgat.," xi., 108) about the slow motion of  $1^\circ$  in a hundred years. It is surely much more natural to suppose that the poet simply meant that long before the spring equinox after some thousands of years had moved back into January, great upheavals would take place in Italy.

### Japanese Botanical Work.

THE Journal of the College of Science of the Imperial University of Tokyo, vol. xliii., contains (article 1) an admirably illustrated monograph (in English) of the genus of brown seaweeds, *Alaria*, by Prof. K. Yendo. The author has studied the various species on the west coast of Vancouver Island, along the coast of the Kurile Islands and of Kamtschatka as well as in Japan, and also the material in some of the important European herbaria. The descriptive portion is preceded by a general account of the morphology, structure, and development. The vexed question of the cryptostomata in the brown seaweeds is discussed at some length, and the author concludes that these tufts of hairs, at any rate in the *Laminarias*, may be regarded as absorptive organs. A *résumé* is also given of the differing views held as to the life-history, especially as to evidence on the manner of renewal of the blades, of *Alaria*, which, the author considers, "may be either gradual or sudden, according to the conditions of the place where the plant grows." As regards the economic uses of *Alaria*, though *A. esculenta* was extensively used for food in earlier times in North-West Europe, and this and other species are still eaten in various sub-Arctic

areas, the author concludes that the genus has very little value as human food or for kelp-ash. For manure it may be used equally well with other brown seaweeds. The species inhabit the colder northern seas, the greatest number being found within a range from about  $42^\circ$  N. up to the Arctic Circle. Fifteen species are recognised. Of these full descriptions are given, variations in form and synonymy are discussed, and a list of localities is cited. The form and structure of the species are illustrated in nineteen excellent double-page plates.

The same volume contains a short paper (article 2) by T. Matsushima describing investigations on the transpiration of cut branches, and an ecological study (article 3) by Y. Yoshii of the Ota dunes—both in German.

In the "Icones Plantarum Formosanarum," vol. viii., Bunzo Hayata continues his descriptive work on the flora of the Island of Formosa, based on the study of the collections of the Botanical Survey of the Government of Formosa. The present volume contains descriptions of species and varieties of flowering plants in various families, and of ferns; 111 new species and 17 varieties are included. The total number of species of the flora is brought up to 3458, contained in 1174 genera representing 169 families. The genus *Citrus* (orange, lemon, etc.) is treated at some length, as also are the figs, *Ficus*, of which the author recognises 29 species in Formosa. In addition to eighty-eight text-figures, the species are illustrated by fifteen excellent full-page plates showing habit and floral dissections.

### Researches on Egyptian Cotton.

THE newly appointed Cotton Research Board for Egypt has issued a Preliminary Report, in which a sketch is given of the general significance of the Egyptian cotton crop and the formation and proposed operations of the new Board are described. Plans of the buildings under construction are shown, and a few illuminating figures serve to bring home to the reader the immense volume of detailed information required in the modern study of crops. An outline of the field of work to be undertaken by a staff of eleven non-Egyptian scientific workers and twenty Egyptians is given for the botanical, entomological, chemical, and physical sides, though the Board is rightly careful not to bind itself to a definite programme.

Those interested in cotton or in Egypt cannot fail to be very glad that this Board has at last come into existence, but the matter is of wider interest in that a move has here been made towards the separation of administration from research. Both functions have been hampered in the past history of many agricultural services by mutual confusion, and we anticipate that the step taken by Egypt in this matter will be generally adopted.

The only criticism we would offer on this report is upon the reason given for the establishment of the Board, to wit: "Past experience of . . . the disadvantages attaching to the investigation of cotton problems from the point of view of any one branch of science." We would rather have judged that Egyptian cotton had been singularly fortunate in the informal and voluntary co-operation of every branch of science, the schools of medicine and engineering, and the departments of survey and geology, as well as the agricultural organisations, having given invaluable help in all directions. We would suggest that past experience showed rather the need for a body (such as this Cotton Research Board) which would