

SCIENCE

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BOTANY IN JAMAICA.

BY JAMES ELLIS HUMPHREYS.

WE are apt to think, when speaking of American botany and botanists, only of those of the United States and Canada, assuming that our southern neighbors, both continental and insular, have not yet reached that stage of civilization that encourages the cultivation of the sciences. And so far as those regions are concerned which have felt the influence chiefly of Latin civilization, this is measurably true. But some of the neighboring islands have been under Anglo-Saxon rule for two centuries or more, and have felt different influences. Not, indeed, that their people, as a class, have been much affected by contact with their rulers, but in the British islands the mother country has especially fostered botanical study from an early time, and British residents have carried with them the scientific impulse.

Jamaica has been a British colony for fully two hundred years, and it is now more than one hundred since its first botanic garden was established at Bath. At first privately supported, it afterward received spasmodic government support. But eventually the site was abandoned and a new location was chosen beside the Wag water and among the beautiful hills of the interior nineteen miles north of Kingston. From this time the support of the government was constant and effective, and the Castleton garden grew steadily in consequence, under competent directors sent out from England. It has now an especially notable collection of palms and orchids, besides its economic collection.

Meantime the Hope Gardens, near Gordon Town, and six miles from Kingston, begun for private pleasure when the island was in the full tide of its prosperity from the profits of sugar and rum, have been taken up by the government and are destined to be the chief botanical centre of the island. This collection is newer than that at Castleton and therefore does not possess as many fine specimens and, in some other respects, does not equal it. But most of the propagating and active work of the department is now done at the Hope Gardens. As must inevitably be the case with most government establishments, the chief work of the Botanical department of Jamaica, as of other British colonies, is economic, the study of the useful plants of the colony, their propagation and products. Its work is at present ably directed by Mr. William Fawcett, F. L. S., formerly of the British Museum.

A third establishment in charge of the department is the experimental *Cinchona* plantation far up the Blue Mountains. Here, also, is the official residence of the Director, in an almost ideal location and climate. Indeed, it is said, to quite justify the enthusiasm of an admirer, who called it "the loveliest spot in the British empire."

This place, called Cinchona, can be reached only by a narrow bridle-path that runs twelve miles upward into the heart of the mountains from Gordon Town.

The department issues a periodical bulletin of the results of its work.

Ever since the time of Patrick Bowne and Sir Hans Sloane, the higher plants of the island have found devoted

students. And among them must be specially mentioned Grisebach, whose "Flora of the British West Indies," London, 1863, remains the only hand-book of the subject. But the Thallophytes of the region have received little attention and offer a very attractive field.

The wife of the present energetic governor of the island, Sir Henry Blake, some time since proposed the raising of a fund to establish a permanent marine biological laboratory as a memorial to Columbus, who landed on the island on his second voyage. The idea is an admirable one, but the project remains, so far as can be learned, *in statu quo*. A small and well-equipped laboratory at a suitable point on the island, open to the zoölogists and botanists of the world, might be of the greatest service in affording means for the collection and preservation of the numberless tropical forms of life in which Jamaica and the surrounding waters abound. A party of zoölogists from the Johns Hopkins University has this year, for the second time, established a temporary laboratory at Port Henderson on Kingston harbor; but I understand that this choice of a location has been largely governed by the presence of suitable accommodations. It will be agreed that, in determining the site for a permanent laboratory, the abundance of available vegetable, as well as animal, life should be consulted. After a somewhat careful examination of the marine flora of the easterly part of the island, as far west as St. Ann's Bay, the writer can say that several of the ports on the north side are far more favorable, botanically, than Kingston harbor. And perhaps no region is, on the whole, more favorably situated or richer in its vegetation than the neighborhood of Port Antonio. This port has more frequent communication with the United States than even Kingston, from its extensive fruit trade. And the journey from Europe to Jamaica is less monotonous and less expensive, as well as quite as quick, *via* the United States, as by the Royal Mail from England.

Another factor of considerable importance lies in the much cooler and more healthful climate of the north side of the island, as compared with the south side.

In Jamaica, then, the botanist finds evidences of past and present activity in certain lines, and the sympathy and aid of fellow workers. It is much to be hoped that he may soon be able to find, also, the laboratory facilities, which will enable him to study to the best advantage the unsolved problems of tropical vegetation.

INTRODUCTION OF WEEDS IN GRASS SEED.

BY THOMAS A. WILLIAMS, STATE AGR'L COLLEGE, BROOKINGS, S. D.

In the course of some experiments on forage plants, which were begun last season on the Station grounds, quite a large quantity of grass and clover seed was purchased from various seedsmen, principally from Hendersons, of New York. At the time of sowing some of the packages were found to contain more or less seed of various weedy plants. The plots were watched closely, and the following plants were found to have been introduced:

Cruciferae.—*Nasturtium palustre*, (L.) D. C.; *Sisymbrium officinale*, (L.) Scop; *Camelina sativa*, (L.) Crantz; *Brassica arvensis* (L.) B. S. P.; *Brassica alba*, (L.) Gray; *Brassica nigra*, (L.) Koch; *Brassica campestris*, L.; *Erysimum cheiranthoides*, L.; *Erysimum orientale* (?) L.; *Diploaxis tenui-*

folia (?) (L.) D. C.; *Raphanus raphanistrum*, L.; *Raphanus sativus*, L.

Capparidaceae.—*Cleome integrifolia*, Torr. and Gray.

Violariaceae.—*Viola tricolor*, L.

Caryophyllaceae.—*Saponaria officinalis*, L.; *Saponaria vaccaria*, L.; *Silene antirrhina*, L.; *Silene noctiflora*, L.; *Lychnis alba*, Mill; *Agrostemma githago*, L.; *Cerastium arvense*, L.; *Stellaria media*, (L.) Smith; *Spergula arvensis*, L.

Geraniaceae.—*Geranium pusillum*, L.; *Erodium cicutarium*, (L.) L'Her.

Leguminosae.—*Vicia sativa*, (L.) Koch.

Umbelliferae.—*Carum carui*, L.; *Coriandrium sativum*, L.; *Daucus carota*, L.

Rubiaceae.—*Galium* sp. ?; *Galium tricornis*, With.; *Galium verum*, L.

Compositae.—*Anthemis cotula*, L.; *Achillea millefolium*, L.; *Carduus nutans*, L.; *Centaurea cyanus*, L.; *Taraxacum officinale*, Web.; *Sonchus arvensis*, L.; *Sonchus asper*, Vill; *Sonchus oleraceus*, L.

Borraginaceae.—*Lithospermum arvense*, L.

Plantaginaceae.—*Plantago lanceolata*, L.

Polygonaceae.—*Rumex crispus*, L.; *Rumex acetosella*, L.; *Rumex acetosa*, L.

Gramineae.—*Panicum crus galli*, L.; *Panicum glabrum*, (Schr.) Gaud; *Panicum sanguinale*, L.; *Avena fatua*, L.; *Eragrostis*, major, Host; *Eragrostis pilosa*, (L.) Beauv; *Bromus mollis*, L.

It is interesting to note the spread of weeds in a new State. *Saponaria vaccaria* is found along the railroads, together with *Anthemis cotula*, over the whole of eastern South Dakota. The former has even followed up the freighting trails over the range between Pierre and the Black Hills, where it is quite common, particularly at watering and camping places. Man is evidently the one who is responsible for the distribution of this weed.

PERIODICAL CICADA.

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DURING the present year two broods of the Periodical Cicada, or so-called "Seventeen-year Locust" (*Cicada septendecim* L.), one of the seventeen-year (*septendecim*) race, and one of the thirteen-year (*tredecim*) race, will make their appearance in different parts of the country.

The following list of localities has been prepared from previous records. Any evidence giving the extent of territory over which they appear in any county or state, or any well-attested dates of their appearance in previous years, will be thankfully received and appreciated.

BROOD XVI.—*Tredecim*—(1880, 1893.) Alabama—Lowndes County. Georgia—Cobb and Chefokee Counties. Tennessee—Lincoln County. North Carolina—Lincoln and Moore Counties. This brood is but little known, and all localities require further confirmation this year.

BROOD XI.—*Septendecim*—(1876, 1893.) North Carolina—From Raleigh, Wake County, to the northern line of the State; also in the counties of Rowan, Davie, Cabarrus and Iredell. Virginia—From Petersburg, Dinwiddie County, to the northern line of the State; Bedford and Rockbridge Counties; Valley of Virginia, from the Potomac River to the Tennessee and North Carolina lines. District of Columbia—Woods north of Washington. Maryland—Southern half of St. Mary's County. Kentucky—Trimble County. Indiana—Knox, Sullivan and Posey Counties. Illinois—Madison County. Kansas—Dickinson and Leavenworth Counties. Colorado—Cheyenne Canyon. This is a well-established brood, most of

the localities in the Eastern States, as well as those in Indiana and Illinois, having been verified in past years; but the localities in Kentucky and Kansas require confirmation, and that in Colorado is extremely doubtful.

NOTES AND NEWS.

In this age of rapid advancement in all lines of knowledge, especially in science, people have learned that combined organized labor accomplishes far more exact results than individual effort. Every department of science has its organization for the promotion of that science. Such an organization is the Wilson Ornithological chapter of the Agassiz Association, for the promotion of American ornithology. It is composed of active, associate and honorary members. It is in no respect a rival of the American Ornithologists' Union, but has its work conducted on a coöperative plan, and therefore necessarily largely systematic. While furnishing the more advanced with ample material for work, it also offers such opportunities to the younger and less experienced as are best suited to their needs. It seeks to educate those just beginning and those pursuing a dilatory course into the highest usefulness as working ornithologists. Active members pay an initiation fee and a yearly assessment of \$1.00, and are limited to 100 in number. This number is now nearly reached. Associate members pay a yearly assessment of 50 cents and are unlimited in number. All working ornithologists are invited to join and aid in the work. Applications for membership should reach the President or Secretary before Sept. 20, to insure insertion in the list of candidates for the October election. Address either Willard N. Clute, Sec., Binghampton, N. Y., or Lynds Jones, Oberlin, Ohio.

—William Beverley Harison published on the 15th "The Foreigner's Manual of English." This is prepared for use in mixed classes of foreigners, and can be used without any knowledge of the several languages, as English only is used throughout. It has been carefully corrected to embody all of the suggestions of Gouin, whose book appeared after completion of first MS., and during revision the MS. has been successfully used in teaching Chinese, Polish Jews and others absolutely ignorant of both written or spoken English. The lessons are arranged to give in each a concrete subject, and a useful vocabulary is given to enable the student to talk from the beginning.

—The Chain Hardy & Company, Denver, Colo., have just ready the revised and enlarged edition of the "Geology of Colorado and Western Ore Deposits." This work of Professor Lakes, of the State School of Mines, has already run through one edition as applied to Colorado. Now that the Western States have been included the sale is expected to be quite extended. The plates illustrating the geological formations are very elaborate, and illustrate the peculiarities of veins and ore deposits. The book is designed for a text-book, and is also adapted for general reading by those interested in mining.

—Rand, McNally & Co. have in preparation the Proceedings of the Bankers' and Financiers' Congress held in Chicago from June 19 to 24.

—The Scientific Publishing Co. have just ready a work on "Universal Bimetallism and an international monetary clearing house, together with a record of the world's money statistics of gold and silver," etc., by Richard P. Rothwell, editor of the *Engineering and Mining Journal*.

—Macmillan & Co. have just ready "A Treatise on the Theory of Functions," by Prof. James Harkness, of Bryn Mawr College.