

fragmentation of holdings, by constant divisions and sub-divisions among the inheritors of the property, makes it impossible to carry out any orderly development; while, the laws of inheritance, the prevalent easy-going tolerance, and the elastic joint-family system, tend to keep persons at the farm, whether they be fit, indifferent or thoroughly incompetent. He is unable to suggest any remedies but avers, that, till this condition of affairs, is considerably altered, we cannot hope to make any rapid progress. The Howards contribute a very interesting article on "Drainage and Crop Production." Various other interesting articles follow which space forbids us to review in the pages of this journal. There are three articles, all illustrated, from the staff of our college.

1. Studies in the Chemistry of Sugar cane by *B. V. Nath*.
2. Effect of Salinity on the Growth and Composition of Sugarcane Varieties by *K. Krishnamurthy Rao* and
3. Some Foreign Insects which we do not want in India by *T. V. Ramakrishna Iyer*.

The Editor in the preface remarks that space does not allow the publication of all the papers read at the agricultural section, and we are reminded of the complaint by a previous governor of Madras, that, in the session of the congress at Madras, in the year 1915, there was a scarcity of papers in the Agricultural section. We hope, that, when next the congress comes to Madras, there will be a need to issue a double number.

T. S. V.

Extracts.

Responsibilities of Botanical Science.

"Some Responsibilities of Botanical Science" is the subject of Prof. B. E. Livingston's address to the Botany Section of the American Association for the Advancement of Science meeting

at Baltimore last December (Science, February 28, 1919). The work of botanical science is at present carried on by a sort of guerrilla warfare, each man for himself; for a planned and productive campaign co-operation is necessary. The objects to be attained are twofold. The first is the conservation of knowledge already attained. The existing means for presenting botanical abstracts and resumes are merely makeshifts; there is need for a national or international institute for the furnishing of bibliographical information on request. Such an institute would be a great undertaking, with a permanent staff of departmental heads and a corps of bibliographical assistants; but it would seek the co-operation of all men of science. It would avoid enormous waste of time and energy on the part of scientific workers and research institutions, and give congenial employment to many who wish to serve in scientific work, but may not find their best places as teachers or research workers.

The second object is botanical research, which is considered under three heads: the planning of research, the procuring of data and the interpretation and presentation of results. Prof. Livingston emphasises the absence of any recognition of the investigator as such and the striking characteristic that most of the published work appears to be done by apprentices. The planning of scientific investigation deserves much more attention than it generally receives, and our selection of problems and planning of projected investigations would be greatly improved if co-operation between competent thinkers were more in vogue. The securing of the requisite observational or experimental data is the easiest part of investigation, but comparatively few writers trouble to interpret their results in a logically complete manner. A discussion is written from the point of view of one out of several or many logically possible hypotheses, and one of the greatest wastes in biological research lies in the publication of so many uninterpreted observations. Finally, there are the responsibilities

towards applied botanical science, not only the practical applications in the arts, but also the philosophical applications to other branches of science.

(Extract from "Nature" April 24, 1919, No. 2582, Vol. 103.)

T. S. V.

The Water Hyacinth—A new textile plant.

The Chamber of Commerce at Saigon (capital of French Cochin China) made a report of the occurrence of this plant in Further India to the French Professor M. Perrot who thereby laid the foundation of a new industry. This aquatic weed was spreading very rapidly in that country and in a short period covered all the ponds and lakes to such an extent that it soon came to be regarded as a serious pest. It was noticed in Cambodia about 1902 and appears to have arrived there from the Philippines or from Java or probably from Japan. Since that time it spread so enormously that the authorities became anxious lest it should hinder navigation. The natives were advised to collect and burn the plants and the province of Battambang had to sacrifice a considerable sum of money for this purpose. Perrot found that the plant possessed strong fibre which may doubtless be turned to good account as fibre. He removed the leaves and crushed the stalks in a machine so as to clear the fibres. After drying in the shade he was satisfied about the strength and flexibility of the fibre and found it suitable for cords, binding threads and larger ropes and also for woven mats and sail cloths. It was found to be specially suited for chair bottoms in place of cane work. Of more local interest was its use in the manufacture of rice gunnies for which it was shown to be excellent. For chairs usually used in Cambodia, the fibre was of sufficient flexibility and strength similar to jute. Its specific gravity is also same but it can be diminished by treatment with solution of chrome-alum whereby the pores are closed and the

material is rendered impenetrable to water. The fibre takes any kind of colour and its firmness and strength have also been proved to be satisfactory. According to Perrot's process which can be carried out by native workmen 100 kg of green stalks will yield 4.5 kg of perfect fibre. The thread may be compressed into small balls by means of the usual presses and exported to the thread manufactories of Europe, of course in small quantities at present.

(Der Tropenpflanzen 1913).

“Leucas.”

A great future for Ximenia Americana.

Ximenia Americana is a large thorny shrub or a low tree belonging to the Olacaceæ family and not Oleaceæ as mentioned in the International Review, year 9, number 9, September 1918 and is a cosmopolitan tropical plant. It is said to be particularly abundant in America and the west coast of Africa and is also said to occur on the coasts of Tenasserim, the Andamans and the Malayan Archipelago. It is commonly found in this Presidency in the Circars in the dry parts of Vizagapatam and Godavari Districts, in Deccan in the Hills of Bellary, Nallamalais of Kurnool, Ballepalli of Cuddapah, Walliar jungles of Coimbatore; and Chinnar in Travancore and Somanathpur and Shimoga in Mysore.

It is a root parasite with small ovate obtuse leaves, often appearing folded lengthwise when young, bright orange scarlet, edible, one seeded fruit and yellowish red, hard, close grained wood, sometimes used as a substitute for sandal. Kernel is also said to be eaten.

It was successfully proved in the year 1906 to be parasitic in nature and its haustoria are distinguished by their large size and “their great enveloping growth frequently hiding the host's root in their embrace”. It is known as “Nakkira or Uranakkira” in Telugu “Cheru Elandai” in Tamil, “Pinle Kayin” in Burma and is called “mountain plum” or “sea plum” in Jamaica and “Zuur pruin” (acid plum) in South Africa.

The value of the fruit is said to lie particularly in the high oil content of its seed. In all probability the plant may be largely used commercially as soon as it is better known and cultivated more carefully and intensively.

Among the new properties found in it, particular attention is drawn to the hexabromide test and the special properties of the solid acids. According to its percentage of bromine derivations insoluble in ether, *Ximenia* should come immediately after linseed and candle-nut oil in the list of siccative oils, with respect to the linoleic acid content.

The oil extracted from this plant is said to be used by the South African natives to make candles and to anoint their bodies. The fruit is said to make excellent preserves.

(International Review of the Science and Practice of Agriculture dated 1st March 1919). C. T.

The Development of Agricultural Research and Education in Great Britain.

So little attention seems to have been paid for a long time to agricultural research and education in Great Britain that a number of capable men were obliged to seek employment abroad. The first attempt to remedy this was made by Mr. Lloyd George in 1910 by starting the Development Commission which was provided with funds for the promotion of agricultural industry. The Commission gave a grant of £ 50,000 for a scheme of the Board of Agriculture for the promotion of agricultural research and education, and the latter distributed the amount to various institutions and one of the conditions was that the Board should be supplied with a report on the work done. As a result, the laboratories were very much improved, staffs were strengthened so that a considerable amount of technical knowledge was obtained to tackle agricultural problems.

After eight years' work, the Board was fully satisfied with the results obtained and so it now proposes for further development. Its scheme involves an expenditure of £ 400,000, of which colleges are to be subsi-

dised by £ 40,000, research by £ 100,000 and the remainder to country and other work. The scheme emphasises on more country work, more farm institutes and more experimental stations. It proposes to give scholarships to a larger number of men who have distinguished themselves at the Universities in natural science, to specialise in agricultural science to qualify them for appointments in research institutions. A scholarship system is already in existence in which there are only 40 permanent research posts; but it is proposed to raise these to 150. The striking feature is that the teacher is made responsible to the candidate whom he nominates. This makes it possible to get none but the best men.

Increase of agricultural education is proposed to be done by giving grants to the existing schools and colleges to develop on more extensive lines. Work of the colleges is to be of use to farmers who must be brought into contact with demonstration farms and such other organisations. It is also proposed to increase farm institutions where sons of farmers and labourers could send their sons, if schools and colleges are not possible. Lastly, there is to be provision for giving short courses to school teachers from rural districts.

(Extract from Nature, May 22nd 1919).

U. V. R.

Notes and News.

With a gift of 50 Rupees received from Mr. D. T. Chadwick a tug-of-war rope has been purchased. It was used for the first time during the peace celebrations at College when Dr. Norris' wards won the intertutorial match and the farm staff beat the College staff. We tender our best thanks to Mr. Chadwick for this most useful gift.

Estate News.

During the first half of June Mr. Niccols, the Government Architect paid a second visit to the college, we understand, in