

details of these experiments. One wonders if the effect of colloidal silt which is so prevalent in the river Ganges has been taken account of in the model.

Punjab Irrigation Research Institute, Lahore.—The Institute deals with almost all aspects of irrigation, from river training to reclamation of alkali soils by molasses. The poor results obtained with molasses in the Punjab as compared with the very satisfactory results obtained in the United Provinces make one wonder if the two types of alkali soils were the same in both the Provinces. It appears that an extensive series of model experiments on tube wells had been carried out in the Institute. The results, although indicated only briefly, appear to be highly instructive.

Bombay Research Station, Poona.—This Station has been mainly busy with waterlogging and drainage problems in the sugarcane areas of the Deccan Canals. Experiments on reclamation have also been carried out.

United Provinces Research Station at Lucknow.—This Station has now got a small flume for carrying out experiments in two dimensional models such as scour below falls. A number of models on different scales had been experimented upon. The silting of Sarda Canals Main Line and the control of silt entry at the head by means of regulation had been the subject of another investigation at this Station. The methods

of sampling suspended silt from the river and the canal adopted in this experiment do not appear to be satisfactory. The authors are requested to see that these samples are representative and reliable.

Sind Research Station at Karachi.—It appears that this Station has increased its activities in the direction of model experiments mainly on falls and scour below falls. They are more or less on the standard lines as carried out in other stations. Lacey's Silt Theory received some attention here also but as was pointed out before, it did not lead to any useful conclusion.

In the agenda for the eighth meeting of the Research Committee of the Central Board of Irrigation held in Simla from the 5th to the 9th July 1939, there are a number of interesting items discussed.

One of these was the establishment of a Central Research Station for Irrigation. The arguments that had been advanced for or against the establishment of such a Station were many. But one point seems to have been missed by most of the speakers that irrigation and river conditions are different in different parts of India and as had been pointed out before the results obtained in Northern Indian conditions will, in most cases, not be directly applicable to deltaic conditions in Bengal or Madras. Under these circumstances it appears regional Research Stations will be more suited to Indian conditions than a Central one.

## OBITUARIES

### P. V. MAYURANATHAN (1893-1939)

MR. P. V. MAYURANATHAN, who died of heart failure on December 1, 1939, was born on March 4, 1893 not far from Palghat, where he was educated till he passed his Intermediate examination. He then entered Presidency College, Madras, where he studied botany under Prof. Fyson, taking his B.A. degree in 1918. After teaching for a time in the Venkatagiri Raja's School, Nellore, he joined the staff of the Government Museum, Madras, in August 1920, taking charge of the Botanical, Geological, Anthropological and Economic Sections, the Anthropological Section being separated later under its own Curator.

In view of the multifarious duties imposed upon its Curator, it is not surprising that the Botanical Section had come to be badly

in need of reorganisation. The first necessity was the building up of a reserve herbarium collection on which to draw for exhibition purposes, work on which he entered with enthusiasm and continued till his death. Special attention was naturally paid to local plants, resulting in his preparing in conjunction with Mr. Barnes, of the Madras Christian College, *The Flowering Plants of Madras City and its Immediate Neighbourhood*, published as a Madras Museum Bulletin in 1929.

Owing to the difficulty of dealing with succulent plants from herbarium specimens only, a collection of living specimens of the Indian species of *Caralluma* was made and an account of them was published by Mr. Mayuranathan and myself in 1931. This led him to attempt a similar study of the succulent Euphorbias of India on

which he was still engaged at the time of his death, progress being dependent on their slower rate of growth. He was also much interested in the histories of introduced weeds and other plants, to the study of which his most noteworthy contribution is a paper on *The Original Home of the Coconut* based on allusions in Sanskrit literature and Indian tradition as well as on botanical evidence. This was published in the *Journal of the Bombay Natural History Society* in 1938.

The need to deal effectively in the Museum with the major ecological aspects of South Indian botany necessitated the preparation of a classification of the principal types of South Indian vegetation. This he began in collaboration with me about a couple of years ago. The extensive knowledge he had acquired during his various collecting expeditions formed the basis of this work. A scheme of classification was formulated and submitted to several other botanists for criticism, since it presents problems in which the widest collaboration is likely to be helpful. Its main lines seem to meet with general acceptance, but some details need modifying and this has yet to be done. His untimely death is a great loss.

F. H. G.

#### V. N. RANGANATHA RAO, L.Ag.

BY the sudden death of Mr. V. N. RANGANATHA RAO, L.A.G., Economic Botanist, on the 2nd December 1939 after a brief illness, the Mysore Agricultural Department lost a very devoted and successful plant-breeder. The late Mr. V. N. Ranganatha Rao comes of a family which has rendered meritorious services to Mysore. He was the nephew of Mr. Vijendra Rao, Chief Secretary to Dewan, Sir K. Seshadri Iyer. He had his agricultural education in the Nagpur Agricultural College and his training in plant-breeding under Dr. R. J. D. Graham, formerly Economic Botanist, Central Provinces, now Professor of Botany at the University of St. Andrews. He was also a pupil of Mr. R. J. Allen, C.I.E., now Commissioner of Agriculture, Baroda. Mr. Ranganatha Rao had the greatest admiration for these two professors and up to the last day he was in correspondence with Dr. Graham who had a high regard for his old student.

Mr. V. N. Ranganatha Rao spent most of his service in plant-breeding work on cottons in Mysore. The results of his work are of

far-reaching benefit. He has evolved several strains of Asiatic cottons for the black cotton soil area of nearly 70,000 acres in the Chitaldrug District. Of these (*Herbaceum* 190) better known as H. 190 is the best. It is a cross between *Gossypium herbaceum* and *Gossypium arboreum*. Its cultivation is extending fast as it has a high yield, a ginning percentage of 30, a staple length of almost 1 inch and a spinning capacity of over 30's warp counts and a silky feel. Other strains evolved by him for the black cotton soil area which are under statistical tests are Strain 19 and Nadam-like. These are also gaining in popularity with the rai-yats. To drive out of cultivation the short staple *Bokda* cotton which was seeking a habitation in Chitaldrug on account of its high ginning percentage, he evolved a cross between *Gossypium Cernum* and *Gossypium obtusifolium* (Nadam). Though somewhat wanting in silkiness his *Cernum-Nadam* crosses are heavy yielders with medium staple, a very high ginning percentage of 37 and spinning capacity of 25's warp counts. These are found useful on account of wilt resistance inherited from the *Cernum* parent and very clean for picking.

In evolving new strains of *hirsutum*s Mr. Rao has also rendered meritorious service. The scope for cultivation of New World Cottons in the red sandy loams of the Maidan Districts in Mysore is very great. Mr. Rao obtained a good cross between Mysore Doddahatti (acclimatised Upland cotton known to the trade as Banavar cotton) and a tree cotton answering the description of a Peruvian. This cross, M.A. II, with a ginning percentage of 30, spinning capacity of 25 to 30's warp counts and a staple length of 7/8 inch is a most prolific yielder under Mysore conditions of all the New World Cottons grown in India. Individual plants with over 100 bolls are not uncommon. He was engaged during the last three years in evolving an Asiatic cotton with wilt resistance and a high ginning percentage. His crosses now in row tests are H. 190 × *Cernum* Nadam 4-5 and Strain 19 × *Cernum* Nadam 4-5. He has also made new crosses to further increase the lint length and ginning percentage of M.A. II which has a great future in Mysore.

Mr. V. N. Ranganatha Rao's death has deprived the Mysore Agricultural Department of a very able plant-breeder who has rendered meritorious service to his State.