Following this principle he advocates the use of a thick layer of sand at the top and the drawing off of the necessary grain from a hole at the bottom. It is interesting to note that a similar discovery has been made simultaneously and independently at Pusa also.

The experiment with mercury appears when tried in small jars holding a few seers to have been a marvellous success. The author declares, however, that in large receptacles holding 100 seers or more it was not so effective "even though emergence was reduced by about three-fourths.

Experiments to find out which stage of the insect was affected showed that the effect was on eggs in which the protoplasm was observed to become disintegrated. How mercury effects the eggs, whether this property is due to its vapour or whether the phenomenon is of an electric nature or one connected with emanations as in radium, are all problems to be solved by a trained Bio-Chemist. Is it not wonderful that a few drops of mercury should have the property of affecting the eggs of an insect? Is it not even more surprising that this interesting piece of knowledge should have been derived from the ignorant ryot?

Y. R.

Extracts.

The Government of Madras have approved of starting an industrial laboratory at Coonoor and sanction for a period of one year the following staff for the laboratory :—

(1) One chemical assistant on a pay not exceeding Rs. 150 per mensum.

(2) One laboratory attendant on Rs. 20 per mensem.

(3) One clerk-accountant on Rs. 30 per mensem and

(4) Two lascars on Rs. 10 per mensem.

A sum of Rs. 6,000 will be placed at the disposal of Sir Frederick Nicholson for capital expenditure on laboratory and plant and on working expenses for the purchase of raw material, subject to the condition that the usual accounts are kept.

Letter from Sir Frederick Nicholson proposing the Scheme to the Director of Industries.

"I have the honour to make the following suggestions regarding my proposal to employ at Coonoor a young chemist in examining certain minor industries and industrial problems. My proposals for a fruit-preserving factory will follow later; the present letter deals solely with the proposed work for a chemical assistant.

The minor industries include the manufacture of :—

(a) vinegar;
(b) inks;
(c) adhesives;
(d) certain special toilet soaps and the mode of putting them up;
(e) The extraction of certain volatile oils and essenses.

I think you will agree with me that the goods mentioned are desirable products in this Presidency. We have some 45 millions of people without an ink factory, dependent on outside supplies (I have just met with Japanese inks in 'penny' bottles, sold in the Coonoor bazaar at 3 annas), provided with few adhesives and only at exorbitant prices (e.g., Rs. 1-4-0 per small bottle of office gum) or of poor quality; vinegar is much in demand and should not, being a very cheap product, have to bear the relatively enormous cost of transport from England, while toddy or other country vinegar is ordinarily neither good nor cheap nor palatable. As regards toilet soap preparations, I propose to obtain toilet bases from the Calicut Factory and experiment in working them up on recipes known to me or with certain experimental additions and methods; any success will of course be communicated to you for

the soap factory. It also seems to me worth while to attempt the extraction of essential oils, etc., from various odoriferous plants not yet worked and which grow or will grow profusely and rapidly in this neighbourhood; methods and apparatus, moreover, can be varied, instead of depending solely on the ordinary still. There are other matters for experiment which for years I have had in view, but without chance of attempting them.

Colonel Cornwall has kindly promised me, at all events temporarily and on certain conditions to which I have acceded, the use of vacant laboratory at the Pasteur Institute, and will permit me to put up a temporary shed for coarse work and processes such as the preparation of new materials for inks and adhesives, etc. This will get rid, for the present, of the laboratory difficulty mentioned to you in person, viz., that of building accommodation whether in my own compound or elsewhere.

With this laboratory I can begin work at once without further loss of time. I shall have to order special apparatus from home, but can probably borrow or buy out here enough to begin with. If, therefore, Government will—

(1) Sanction a young chemical assistant with a good knowledge of Chemistry and some manipulative skill, together with a laboratory attendant on about Rs. 30 and a clerk-accountant on the same pay, and two lascars: and

(2) Rs. 6,000 for (a) capital expenditure on laboratory and plant and (b) on working expenses for the purchase of raw material including containers for inks, adhesives, etc., I can begin at once. I do not need any personal allowance since Government have recently granted me, as Honorary Superintendent of Fisheries, a travelling allowance which amply suffices for all personal needs; on the cessation of this allowance when I quit fisheries about August, I can again address you, if necessary, on this point.

The proceeds, if any, of sales of finished goods will of course be paid into the Government treasury, and be set off against ex-

penditure. I do not see why, after six months' experimental and initiatory work, we should not obtain considerable *returns*, if not profits.

(From the Madras Times, 28th July 1919.)

Vitality of seed.

Interesting experiments have recently been made at Rothamsted, to investigate the length of time it is possible for seed of weeds to lie dormant. When, in 1915, it became evident that much grass land would have to be put under cultivation, a field which had been under grass for ten years was chosen, and before the land was broken up, samples of earth were taken inch by inch in succession, down to 12 inches at various points in the field. These samples were at once transferred to sterilised pans and kept moist in a glass house. A number of arable weeds came up from every sample, although the conditions of the experiment were such that these young plants could only have arisen from seeds in the soil dormant as long as the land was in grass. The experiment was then repeated in similar manner on other grass fields of known age and history. Soil from grass fields forty years old gave a copious flora of arable weeds especially at the the depth of six to twelve inches, that from fields sixty years old gave fewer arable weeds, and from fields 200 years old none at all. These observations prove beyond doubt that seed of certain weeds can survive in the soil a very considerable period when deeply buried by the plough.

Extract from Planters' Chronicle, Vol. XIV. No. 17, April, 26 '19.

S. Sundararaman.

Abstracts.

The Founders of the art of Breeding.

The March 1919 number of the Journal of Heredity starts with a very interesting article entitled "The Founders of the art of