EXPERIMENTAL WORK AT AN AGRICULTURAL COLLEGE.¹

THE bulky annual before us consists of reports from the various departments of the South-Eastern Agricultural College, prefaced by editorial notes, which summarise the present position of the college. This appears to be satisfactory, and progress in several directions is being made. The editor is dissatisfied with the recognition of Long Ashton by the Development Commissioners as the chief fruit research station for England and Wales. But it must not be forgotten that Long Ashton serves the most important fruit area in the country, extending from Devonshire to Herefordshire and Worcestershire. Wye, however, is to have a research plantation for fruit and hops.

(1) *Farm and Dairying*.—The chief point of interest mentioned by Mr. Mackintosh has reference to the good results obtained by spraying potatoes: "the

described in detail; an excellent account is given of the narcissus-flies (*Merodon equestris*, Fbr., and *Eumerus strigatus*, Fln.); and the house-fly as a carrier of disease germs is described in unsavoury detail.

(4) *Chemistry*.—The two most important articles in Prof. Auld's report have reference to the formation of prussic acid from linseed cake and other feeding stuffs, indicating a certain necessity for care in their use; and the extraction of nicotine from tobacco, with a description of experiments in denaturing.

(5) *Botany*.—Prof. Parkinson contributes an interesting note, in continuation of previous work, on the forcing of plants by warm-bath treatment, e.g. bulbs of hyacinth and narcissus soaked in water at a temperature of 88° F. for twelve hours rapidly outstripped untreated ones (Fig. 1). Mr. Garrad gives his second report on the growing of tobacco for nicotine extraction, and the Principal contributes a note on the smoking qualities of the tobacco, which would seem to be remarkably good.

(6) *Economic Mycology*.—Prof. Salmon's invaluable report deals with the use of lime-sulphur wash and with American gooseberry mildew; and a reprint is given of the important presidential address on "Economic Mycology and some of its Problems" which he delivered to the British Mycological Society last year. Among other things, the significance of "bridging species" is pointed out, e.g. the spores of grass-mildew (*Erysiphe graminis*) taken directly from *Bromus racemosus* cannot infect *B. commutatus*. They can, however, infect *B. hordeaceus*, and the spores developed in this species germinate effectively on *B. commutatus*. The methods of combating fungoid disease are also discussed in a luminous fashion.

(7) *Notes on Hops*.—Prof. Salmon describes in detail the work done by way of raising new varieties of hops, and the sending out of male hops to growers.

(8) *Veterinary Science*.—Prof. Cave decides against preventive treatment, on the lines so far

devised, in the case of "struck sheep," and gives an account of Jöhne's disease; while Mr. Bruce Gardener communicates the results of his useful research on parasitic gastritis in sheep and cattle ("Lincolnshire lamb disease"), due to species of the nematode genera *Hæmonchus*, *Ostertagia*, and *Trichostrongylus*. As these pests are common to sheep and horned stock, it is clear that the common practice of turning cattle on to pasture dangerous for sheep should not be pursued, though horses and pigs will take no harm.

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FIG. 1.—Narcissus. D—"Dipped" plants. C—Undipped or control plants. From the Journal of the South-Eastern Agricultural College.

yields from sprayed and unsprayed plots showing a balance of four tons per acre in favour of the former." The sugar-beet experiments proved, as elsewhere, that the crop can be successfully grown in this country, but it remains to be shown whether the manufacture of beet-sugar is destined to become an important British industry. Sugar-beet slices and coconut cake were found to be useful artificials.

(2) *Hops and Horticulture*.—The article by Messrs. Smith and Wellington on the packing of apples is particularly interesting, especially in relation to the establishment of a commercial fruit show in Kent.

(3) *Economic Zoology*.—Prof. Theobald's report is of considerable length, and, as usual, contains a large amount of familiar matter as well as valuable additions to knowledge. The illustrative plates are excellent. The author has spent much time in investigating aphides, of which 174 species (ten hitherto undescribed) have been found in Kent. The egg-laying of the pear-midge (*Diplosis pyrivora*, Riley) is for the first time

¹ The Journal of the South Eastern Agricultural College, Wye, Kent, No. 20 for 1911. Pp. 519. (London and Ashford: Headley Bros.) Price 7s. 6d., post free.

ADDITIONAL FORTHCOMING BOOKS OF SCIENCE.

AGRICULTURE.

Williams and Norgate.—Soil Fertility and Fertilisers, J. E. Halligan, illustrated.

ANTHROPOLOGY.

Chapman and Hall, Ltd.—The Aborigines of South America, Col. G. E. Church. *G. G. Harrap and Co.*—Cave, Mound, and Lake Dwellers, and other Primi-