

deserves to be more widely known, for as a compendium of all that is latest and best in agricultural research it is far in advance of most of its compeers. The book is divided into parts dealing with the farm, chemical analysis, zoology, botany, veterinary work, and general notes. Where so much is good it is difficult to do more than merely direct attention to some of the most striking portions of the book. A masterful article on the financial aspect of sheep-washing will well repay perusal, and the splendid series of plates illustrative of sheep-shearing are so lucid as to be self-explanatory.

The report on zoology deals mainly with entomology, and is illustrated very fully by many striking plates, one of which is of especial interest, showing as it does female

of spray for Bordeaux mixture are interesting. In addition to the American gooseberry mildew, the somewhat neglected but no less prevalent *Sclerotinia* (*Botrytis*), "die back," of the same plant is described.

In the previous issue of the journal attention was directed to the importance of the male plant in the growing out of hops, and it appears that the advice tendered in the article in question has borne good fruit, and that several Kentish hop-growers have obtained good results by retaining, or even planting, male hops. The veterinary report, always interesting, is especially so in this issue on account of the announcement of the termination of a long series of "struck sheep" experiments, and the probable discovery of a preventive treatment.

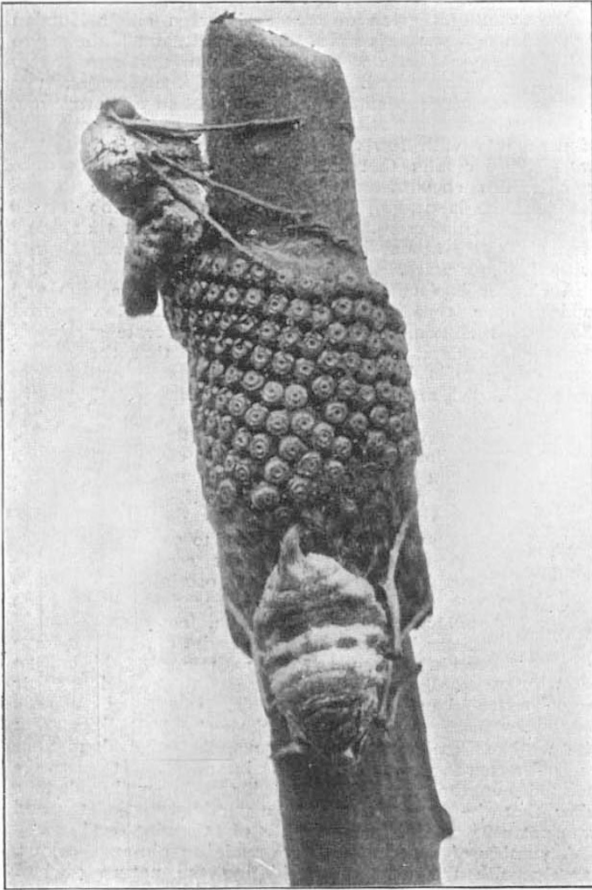


Photo.

F. Edenden.

FIG. 1.—Female March Moths: The lower one laying her egg-band beneath one of the Lackey Moth ($\times 4$). From the Journal of the South-eastern Agricultural College.

March moths laying their eggs in proximity to the egg-band of a lackey moth. That insidious pest *Tylenchus devastatrix* receives attention, and further notes are promised for the next report. A very interesting article on the British *Culicidæ* concludes one of the most fascinating portions of the book.

In addition to the general analytical work, the analytical report deals, for the most part, with soya-bean cake and meal. Economic mycology and experiments on hops form the chief items in the botanical report. It is interesting to note that the good work carried on at Wye in dealing with American gooseberry mildew, apple "scab," and "black scab" of potatoes, is being continued. The notes on the making and application of Bordeaux mixture, with notes on Bordeaux injury, illustrated by no fewer than twenty-three plates, will be greatly appreciated by fruit-growers. Two plates showing the right and wrong kinds

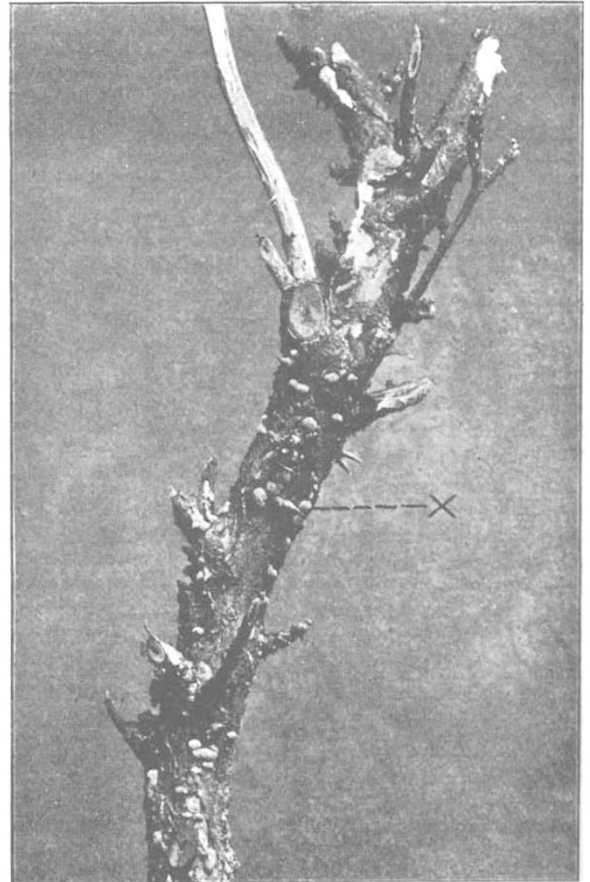


FIG. 2.—Diseased Gooseberry Branch, showing the *Botrytis* fructification at \times and elsewhere. From the Journal of the South-eastern Agricultural College.

The general notes consist of a summary of the college events of the year, and will appeal to all old students. To those who desire to keep abreast of the times in matters agricultural the journal is indispensable. C. A. E.

THE BICENTENARY OF THOMAS SIMPSON.

ON August 20 occurred the bicentenary of the birth of Thomas Simpson, who may be regarded as one of the last of the English school of mathematicians of the eighteenth century. Newton, Halley, the Gregories, Muston, Demoivre, Brook Taylor, Maclaurin, had all passed away before Simpson reached middle age, and the study of mathematics in England was entering upon that period of stagnation which left us without a single mathematician in any way comparable with the great writers on the Continent.

Simpson was the son of a Leicestershire weaver, and was

born at Market Bosworth, August 20, 1710. He was brought up as a weaver, and the little learning he obtained as a boy was gained in spite of many disadvantages and obstacles. Indeed, the opposition he received from his father at last drove him from home, and he went to Nuneaton, where, at about the age of twenty, he married his landlady, a widow of fifty.

His acquaintance with mathematics began at the age of twenty-four with "Cocker's Arithmetic," the study of which he combined with that of astrology, his tutor being a fortune-telling pedlar. Simpson's astrology, however, brought him more trouble than credit, and on the charge of frightening a girl into fits by "raising the devil" he had to leave the district. He spent some time at Derby, and in 1735-6 he went to London, worked as a weaver in Spitalfields, and taught mathematics in his spare time. A year or two afterwards, with the sole assistance of Edmund Stone's translation of L'Hôpital's "Analyse des Infiniments Petits," Simpson wrote "A New Treatise on Fluxions," which was considered a notable contribution to the literature of that comparatively new subject. Other

ELECTRICAL AND OTHER PROPERTIES OF SAND.¹

THIS material, which flows so freely through my fingers and may be poured in the manner of a liquid from one vessel to another, is common sand. Specimens from various parts of the world are here exhibited; there are sands from the Sahara Desert, from New Zealand, France, Scotland, and several parts of England. There are also bottles of the coloured sands from Alum Bay, in the Isle of Wight, and Redhill. It may be pointed out at once that this coloration is merely due to the presence of an adherent layer of oxides or hydroxide of iron, for even varieties which appear under the microscope to contain little or no coloured particles generally have a trace of iron clinging to the grains.

For instance, a small quantity of white sand from Charlton, having been wetted with strong sulphuric acid before the lecture, will yield on the addition of water a solution containing iron. A few drops of ferrocyanide of potassium give a strong blue characteristic precipitate.



FIG. 1.

publications followed, his pupils increased, and he gained a considerable reputation.

In 1743, through the influence of William Jones, the mathematician, Simpson obtained a post as professor of mathematics at the Royal Military Academy, Woolwich, and two years later he was elected a Fellow of the Royal Society, having already been made a member of the Academy of Sciences, Stockholm. After holding his post at Woolwich for eight years he was seized with illness, caused, it was thought, by overwork. Advised to try his native air, he journeyed to Bosworth in February, 1761, and died there on May 14, in the fifty-first year of his age. He was buried in the churchyard of Sutton Cheney, a parish a short distance from Market Bosworth, where in 1790 the Leicestershire antiquarian John Throsby placed a tablet over his grave. Simpson had one son, who became a captain in the Royal Artillery, and one daughter. His wife survived him many years, received a pension from the Crown, and died in 1782 at the great age of 102.

EDGAR C. SMITH.

Further, the so-called black iron sand from New Zealand consists almost entirely of magnetite. If some of it is poured out upon a sheet of paper and brought near to a powerful magnet, you see that the grains fly eagerly to the poles and form large clusters there. This powder, on account of the regularity of its grains, their highly magnetic character and freedom from dust, is particularly useful in the laboratory for tracing lines of magnetic force. It is interesting to compare this with the black oolitic sand from Compton Bay, in the Isle of Wight, for that is a silicate of iron, and therefore non-magnetic.

I wish now to direct your attention to some of the phenomena connected with sand in large quantities, such as are met with upon wide stretches or drifts.

Blown sand, having been stopped by hedges and grass, gradually accumulates to a mound (Fig. 1)—in some cases with serious consequences. Dr. Vaughan Cornish, who has made a special study of this subject, has clearly proved,

¹ Discourse delivered at the Royal Institution on Friday, February 11, by Mr. Charles E. S. Phillips.