

the students for business as farmers or for teaching and research.

Two more purely scientific papers were also taken on the first day; Dr. G. H. Carpenter described some of his work upon the warble-fly and its attacks, and Mr. H. Hunter explained the results of the long and systematic trials of barley varieties that have been made in Ireland by the cooperation of Messrs. Guinness with the Department of Agriculture. These trials have established beyond any doubt the general superiority of "Archer" to other barleys, both from the farmers' and the brewers' standpoint, thus confirming the results of the very similar trials made in Denmark.

Friday was given over to papers and discussions on breeding and on the light which science is beginning to throw on the problems of the stock raiser. Mr. Bateson opened the proceedings by a luminous exposition of the Mendelian standpoint, with illustrations of how the work of the raiser of new varieties of plants or the improver of breeds of animals could reduce his work to something like certainty, and work by design instead of by chance. Mr. W. Heape, F.R.S., who followed, pleaded for the establishment of experimental farms devoted to the solution of breeding problems; attention is at present exclusively given to the raising of crops, forgetting the enormous importance of our live-stock business. To Ireland such experimental work would be specially valuable. Mr. Punnett then gave an account of some of the more special applications of the Mendelian principles to stock questions, and Prof. J. Wilson showed how the facts of colour inheritance in cattle led to certain conclusions concerning the original races of cattle which have gone to make up the breeds now prevailing in the British Islands.

On the Monday the section resumed its previous economic point of view, and gave itself up to a very animated discussion of the factors which make for the success of small holdings. Mrs. Wilkins (Miss Jebb) opened the proceedings with a paper in which she sketched the very various conditions under which success had been achieved in England, and the necessity of certain collateral developments, such as cooperation, if any considerable numbers of small holders have to support themselves upon the land. She maintained that the fact that small tradespeople and mechanics rather than agricultural labourers are at the present moment chiefly applying for small holdings is really a good omen for the success of the movement, since such men are, as a rule, better able to make an economic use of the land than men who would be forced to depend wholly upon their small farming.

Mr. Christopher Turnor insisted on the importance of guiding the small holder in his methods of work and cropping, even to the extent of establishing in each district one or two model holdings cultivated for demonstration purposes. Mr. F. Impey gave some account of the work that had been done in Great Britain in obtaining small holdings of recent years, and Mr. Beach Thomas described the evidence he had received as to the widespread desire of city workers to get back to the land. An animated discussion followed, a little political, perhaps, at times, and not wholly devoid of rhetorical heat, but still informing; the general impression which seemed to emerge was that success is being attained by market gardening and fruit growing rather than by small farming. The president showed that in many cases, especially in Ireland, it is the community rather than the individual who should be the small holder, thus automatically ensuring cooperation both in the work and the trading.

The last meeting was held jointly with the parent section of economics to hear various papers of a more general economic character. Dr. Graham Brooks discussed the moral effects of cooperation upon the workers, and Dr. Moritz Bonn, of Munich, examined the statistics relative to Irish agriculture to ascertain if the last twenty years of land reform had begun to effect any improvement in the productive power of the Irish occupier. Statistically he could detect but little change, a view for which he was somewhat fiercely taken to task by the politicians present. Statistical papers by Prof. J. Wilson and Mr. W. G. Adams terminated a very successful session of the subsection, at which the interest and attendance had been maintained from the first day until the last.

METEOROLOGY IN AUSTRALIA.¹

THE Commonwealth Bureau of Meteorology, Australia has now been in existence more than a year, and issued its first Bulletin a few months ago. This is an article on the "Climate and Meteorology of Australia," and is written by the Commonwealth meteorologist, Mr. H. A. Hunt. It contains some very interesting data with regard to the climate of the various capitals, and indicates that Adelaide is the driest and sunniest, and that Brisbane is the hottest, capital. The hottest region is in the northern part of West Australia, near the Marble Bar and Nullagine goldfields, where the maximum shade temperature often exceeds 100° for days and even weeks continuously.

The Northern Territory and Queensland receive their rain in the summer from the monsoonal depressions from the north-east. The southern parts of West Australia and South Australia benefit from the Antarctic depressions in winter. In Victoria and Tasmania the seasonal change of rainfall is not strongly marked. New South Wales gets most of its rain in the later summer and autumn.

The wettest place is Geraldton, in north-east Queensland, with an average yearly fall of 145 inches; the driest region is round Lake Eyre, where 10 inches in one year is exceptional, 5 inches being the average.

In discussing cyclones and storms, mention is made of the "Willy Willies" which afflict the north-west parts of West Australia. These are severe cyclones which apparently originate in the Cambridge Gulf and travel south-west and south along the line of the coast, or they cross the continent towards the Australian Bight. These storms cause great havoc, and are marked by torrential rains.

The "Southerly Burster" is peculiar to the eastern parts of Australia, and is a cold wind which always follows a period of hot weather. It is usually associated with the V-shaped depression between two anticyclones. These storms are usually first noted on the extreme south coast, and they travel northward at the rate of about twenty miles per hour. The velocity of the winds varies, sometimes reaching eighty miles per hour.

Winds of similar character to "Busters" are the "Bora" on the east coast of the Adriatic, the "Mistral" in France, the "Northers" of Texas, and the "Pampero" in the Argentine. South Africa also has a wind of like nature and origin.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—On the occasion of the visit of the members of the International Conference on Electrical Units, the Public Orator (Dr. Sandys) spoke as follows in presenting on October 17 the several distinguished recipients of the degree of Doctor of Science *honoris causa*:—

(1) Scandinauiam hodie nobis quasi praesentem reddit Upsalae et Holmiae alumnus insignis, qui "electrolysis" (ut aiunt) praesertim in provincia investigatorum omnium dux et signifer merito existimatur; qui scientiae chemicae in regione physica inter conditores praecipuos numeratur; qui e scientia illa praemium orbi terrarum toti propositum reportavit, cuius laudis inter participes illustres et Cancellarium nostrum et rei physicae Professorem nostrum esse gloriamur. Idem solis ipsius naturae inter exploratores patientissimus, tempestatum inter augures perspicacissimus, (ut Aristophanis verbis paullulum mutatis utar) τῶν νῦν μετεωρολογούντων quasi princeps iure optimo esse fertur.

Ergo Scientiarum Doctor hodie merito creatur scientiae chemicae in provincia physica Instituti Nobilis Scientiarum in Academia Regia Holmensi Rector, SVANTIUS AUGUSTUS ARRHENIUS.

(2) Francogallorum respublica maxima, nobis vicina, nobis amicitiae vinculis indies artioribus coniuncta, viri desideratissimi in vicem, successorem eius misit dignissimum, qui non modo inter Germanos sed etiam inter Francogallos educatus, Parisiensium in Universitate iam per annos duo et viginti scientiam physicam praclare

¹ "The Climate and Meteorology of Australia" (Reprinted from the "Year Book of the Commonwealth of Australia," Bulletin No. 1, issued March, 1908.) By H. A. Hunt.