

Problems of Plant Classification

THE Masters Lectures of the Royal Horticultural Society were delivered in 1935 by Sir William Wright Smith, who chose as his subject "Problems in Classification of Plants". A very considerable field of botanical research was reviewed in the two discourses (*J. Roy. Hort. Soc.*, 61, No. 2, 77-90 and No. 3, 117-134, February and March, 1936).

Beginning with the need of the gardener for definite names for his plants, Sir William traced the history of plant groupings. He commenced with Theophrastus, Dioscorides and Pliny, evaluated the work of Cæsalpinus, Ray and Tournefort, made suitable homage to the genius of Linnæus, and also reviewed the more recent work of Darwin, Hooker and others. A teacher of classification would there find a useful, if succinct, résumé of taxonomic history.

Sir William's deft handling of the vexed question of the subdivision or condensation of species is shown by his definition that "a 'splitter' is one who fails to recognize that his three species are only one, as you see it, while a 'lumper' is so bold as to include in one species what you clearly see contains at least six different ones". Inequality in the application of criteria to genera was discussed, and Sir William urged that sharp and wide diversity of generic characters should have value as a possible indication of a primitive nature. The genera of the Polypetalæ, for example, stand out more distinctly from one another than do those of the less primitive. Gamopetalæ.

The subdivision of sharply-defined primary units of classification, such as the Leguminosæ, was deprecated.

Much recent work upon intergeneric hybrids was marshalled to show that a broad concept of the genus is more in keeping with the facts presented by Nature, and no useful purpose is served by separating plants which give such adequate testimony of their affinity.

Classification must eventually stand the test of utility, either for accurate nomenclature, or as an indication of phylogeny, and to the gardener, species are almost invariably the broader concepts of Linnæus, rather than the unserviceable subordinate units of more modern tendency. The trend towards subdivision of species through natural hybridisation is greater in some parts of the world than in others—it is common in New Zealand, and rare in the Himalayas and western China. A recent analysis by Sir William and Mr. H. F. Tagg made it possible to determine the genetic constitution of several rhododendrons, and to prophesy, with some measure of success, which combinations could ultimately be found by exploration. The possible contributions of genetics to taxonomy were discussed, though it is still too early to appraise this point of view.

Sir William is, in the designation of his lectures, obviously a 'lumper', yet a 'splitter' could find no reasonable complaint in this quite impartial analysis of classification problems.

Association of Teachers in Technical Institutions

ANNUAL CONFERENCE AT PLYMOUTH

THE twenty-seventh annual conference of the Association of Teachers in Technical Institutions was held at Plymouth during Whitsuntide, when the president for 1936-37, Mr. W. T. Maccall, head of the Electrical Engineering Department, Sunderland Technical College, was inducted by the retiring president, Mr. D. W. Lloyd, principal of the Technical College, Stretford, Manchester.

In his presidential address, Mr. Maccall referred to the many new demands which the development of the petrol engine and the ever-widening use of radio and the films make upon the technical college. These demands touch nearly all departments of technical work, and range from the need for schemes of certification of garage attendants to the growing and varied courses in workshop management and production engineering.

Despite the suggestion that the art of invention is making workers into machine-minders, Mr. Maccall referred to the shortage of skilled workers, particularly in the several branches of the engineering industry. He asked how far that shortage is due to the lack of a proper recruitment policy, and how far to circumstances beyond the control of industry. Clearly a scientific age demands a scientific planning if the danger of lack of skilled workers is to be

averted. Each industry must consider what type and grades of workers it requires. It should make a complete review of its methods of recruitment, conditions of service, and the normal number of its annual recruits. In proper conjunction with the local education authorities and the Board of Education, educational provision for every type of worker could be ensured. Mr. Maccall expressed the opinion that, broadly speaking, industry has not co-operated fully with education. In many cases, such full co-operation has been prevented by fear. Employers have 'feared' that technical colleges are training all to become works managers. Trade unions have 'feared' that colleges are short-circuiting apprenticeship and providing cheap labour. It should be widely known that colleges cannot *make* engineers, builders, etc.: they can but teach the underlying principles.

After a review of matters concerning examinations, the raising of the school-leaving age, the arguments against the multiple-bias secondary school and the possibilities of the junior technical school, Mr. Maccall referred to the relationship of the technologist to the world about him. Despite the joy which lies in seeing the applications of technology applied to the benefit of mankind, the technologist sometimes tends to lose hope when he surveys the world and sees, over

certain of its great and important tracts, his specialist knowledge seized and directed in the service of might rather than right. He sees ideals overthrown and reason treated with contempt. He sees freedom of speech threatened and the visions of democracy spurned. He sees education itself made subservient to ignoble ends, and he asks sometimes what he as an individual or as a member of an association can do when values become so twisted and the world appears to move towards such disastrous ends. The man of science, said Mr. Maccall, believes in the methods of reason and freedom. The technical institution, despite the charge which is sometimes made of narrow specialisation, would fail to be scientific if specialisation produced ignorance of the ways and aims of mankind. Students must be trained to think clearly not only about the special subjects, but also about the relationship of those subjects to a world contracted and spanned by wireless, by the cinema and by the internal combustion engine. Citizenship is a matter of scientific thinking just as much as any more obviously scientific subject.

The resolutions debated and passed by the Conference included one which urged the development of full-time and part-time day courses in technical

education rather than the present system in which so much technical work is done in the evening. Other resolutions dealt with overtime and the shift system, the school leaving age, recruitment in industry and the extension of technical education. In connexion with the latter, the Conference welcomed the policy of the Government, which is to make increased financial provision, but asked that in the allocation of financial assistance, special regard be had to the needs of depressed areas.

Mr. John Sargent, director of education for Essex, addressed the closing meeting of the Conference. He outlined the policy which is guiding the development of technical education in Essex—a county which was once largely rural and in which areas are now rapidly becoming industrialised. The first step in connexion with that policy is to create four large technical colleges. Their buildings, as well as their curriculum and organisation, have been designed to give the greatest flexibility. The old idea of one industry dominating one area would in the future be avoided. In places like Dagenham, for example, there are new and diversified industries. They can therefore look forward to an escape from the general depression which devastates a 'one industry' area when that one industry falls upon evil days.

Sea Fisheries of Europe

ONE of the most valuable of the various publications of the Conseil Permanent International pour l'Exploration de la Mer is its Statistical Bulletin, in which are tabulated the statistics relating to the sea fisheries of all the maritime countries of northern and western Europe. Such ample and diverse data require much time and labour to assemble and work up; vol. 23*, which has just appeared, presents the data for the year 1933. For the use of those whose interest in the work and welfare of the great fishing industries may exceed their ability to interpret detailed tabular data, a very comprehensive yet extremely lucid summary of the statistical tables is given.

The British reader, unfortunately, will derive but little comfort from the tale this Bulletin has to tell. The total quantity of fish landed by all the countries concerned—from Norway to Portugal—was greater by some 200,000 tons (about 6 per cent) in 1933 than in 1932. It was 5 per cent less than the 1930 yield (the highest on record) but 26 per cent greater than in 1913—the last normal pre-War year. Unfortunately, Great Britain has no share in this increase. Both absolutely and relatively, English and Scottish landings have fallen sharply. The English landings, though only very little smaller in 1933 than in 1932, showed nevertheless a decrease of no less than 15 per cent on pre-War figures. In Scotland the fall has been even greater. In 1933, Scottish landings diminished by 12 per cent as compared with 1932, and by as much as 36 per cent as compared with 1913.

A very different state of affairs is revealed in Norway, Germany and Iceland, each of which has had a very marked increase. In fact, almost every

important fishing country except Great Britain shows increased landings in recent years. The accompanying table of the total quantity of fish landed (in thousand tons) is highly illuminating, though somewhat disquieting from the British point of view.

	Total Quantity				Ratio to 1913			
	1913	1931	1932	1933	1913	1931	1932	1933
Iceland ...	92	311	288	328	100	338	313	357
Germany ...	181	370	353	387	100	204	195	214
Norway ...	732	843	1019	1162	100	115	139	159
France ...	193	247	262	277	100	128	136	144
England ...	821	752	702	698	100	92	86	85
Holland ...	147	168	116	111	100	114	79	76
Scotland ...	398	263	292	255	100	66	73	64

The fishing grounds from which the fish are drawn extend from Bear Island to Morocco; but the North Sea still retains its position as "the most interesting, the most important and the most productive" of them all. From 1924 until 1933, the North Sea yielded on an average about 1,155,000 tons of fish a year. 1,171,000 tons were landed in 1933—a quantity which was exceeded only twice in the ten-year period. Relative to the grand total of fish from all grounds, however, the North Sea's contribution is tending to fall slightly. This is due not to any actual decrease in its own productivity, but to increased landings from elsewhere. Over the ten years 1924–33, the North Sea yielded an average of 34.4 per cent, or a little more than one third of the grand total. But in 1924 it yielded 39.7 per cent, whereas in 1933 the proportion had dropped to 31.7 per cent.

That the North Sea maintains its yield is a satisfactory condition little expected by the prophets of twenty years ago. Nevertheless, the constancy of the yield is quantitative only; qualitatively, considerable change of a disturbing kind has taken place.

* Bulletin Statistique des Pêches Maritimes des Pays du Nord et de l'Ouest de l'Europe. Vol. 23 (pour l'année 1933). (Copenhague: Andr. Fred Hest et Fils, 1935.) Kr. 3.00.