

common focus: one of them is circular and turns under the control of the others, which are fixed.

Sir Alfred Ewing went on to show that with these models it is possible to imitate known features in the magnetic behaviour of metals, including effects of stress and temperature, and also effects due to the presence of non-magnetic atoms in a ferromagnetic

substance, whether these were impurities or were present in combination with the metal. It was pointed out that the new model preserves all the advantages in this respect of his model of 1890 and at the same time escapes the quantitative discrepancy which had made it necessary to amend the former theory.

The Profession of Chemistry.

AT the forty-fourth annual general meeting of the Institute of Chemistry held on March 1 the president, Mr. A. Chaston Chapman, presented the first Meldola medal to Dr. Christopher Kelk Ingold. The medal, which is the gift of the Society of Maccabæans, has been instituted as a memorial to Prof. Raphael Meldola, a past-president of both the Institute and the Society, and is awarded for meritorious original work in chemistry conducted by British subjects under thirty years of age.

In the course of his presidential address Mr. Chaston Chapman said that owing to a variety of causes—foremost among which must be placed the intensive educational effect of the great war—the importance of chemistry to the national well-being was daily becoming more widely and more clearly recognised, and with that recognition had come a great development of the work of the Institute. The roll of members had increased during the past twelve months by 371 to more than 3540, and the students by 84 to 883. The organisation of the profession of chemistry was thus being steadily effected. The older members had the satisfaction of seeing the Institute placed on a sure foundation and its position as the body truly representing professional chemistry in this country, acknowledged alike by chemists, by the general public, and by the Government.

Referring to the scheme recently inaugurated under arrangements made with the Board of Education for the award of National Certificates in chemistry to students in technical schools in England and Wales, the president remarked on the advantage of bringing such students at an early age into touch with the professional qualifying body. Later, when the scheme was in operation, the council of the Institute would consider whether, and to what extent, the certificates should be allowed to rank towards the fulfilment of the conditions required for admission to the examination for the Associateship of the Institute.

In an open and comparatively young profession such as chemistry it was necessary that the public should understand clearly the nature of the work in which the members were engaged. He did not believe that any single cause had contributed so greatly to retarding in the past the progress of the profession of chemistry in this country as the misapplication of the word *chemist*. In no other country was there any confusion between the person who practised chemistry and the person who followed the profession of pharmacy, and continental chemists often expressed their inability to understand what they no doubt regarded as one of our many national peculiarities. For the present the members had to be content to express the hope that their friends the pharmacists, without relinquishing their rights, would, wherever possible, refer to their ancient, important, and very honourable calling by the word which more accurately defined and described it. The power—he might say the tyranny—of a word was often very great, and he appealed to the press, as a very important factor in the enlightenment of the general public, to assist, so far as it could, by employing the terms *chemist* and *pharmacist* respectively in the correct signification. It was to be deplored when

such confusion was the unfortunate consequence of the poverty of a language; but, in this instance, the correct and distinctive words were readily available and the confusion was, therefore, easily avoidable. If chemists themselves used the word without qualifying adjectives, it would be an effective step towards establishing the proper meaning of the word.

The war had proved a very powerful factor in informing the public of the activities of the chemical profession, which occupied a position in the public esteem such as he (the president) would not have thought possible in his own lifetime; but every member should help to the best of his ability to consolidate the position they had gained, and to keep alive in the public mind the enormous national importance of the profession. Whether we regarded chemistry as a subject of study, essential to an understanding of the world in which we lived, as an agent which had done so much to transform the life of man, as one of the most powerful factors in the creation of material wealth, or, finally, as that department of natural knowledge on which our national prosperity and our national security so largely depended, its supreme importance was equally manifest.

Commenting on the production of British laboratory glassware, porcelain, and fine chemicals, the president said that the view taken by the council of the Institute and by many others who were desirous of seeing those industries firmly established in this country was that it would be a mistake of the first magnitude to revert to the position of dependence on foreign—and possibly enemy—nations. The whole chemical industry (including those essential to successful conduct of war), the prosecution of scientific research with all that it implies, and the practical teaching of science in schools and universities, all depended upon a supply of laboratory glassware, porcelain, and chemicals, adequate in quantity, suitable in quality, and reasonable in price. On national grounds, it was obviously desirable that the country should be ever directing its activities to production and to the increasing development of its internal resources. There was, moreover, the further consideration, which was much in the minds of the council, that the establishment of these essentially chemical industries demanded the services of properly qualified chemists. British manufacturers had made great progress under difficult circumstances, and there appeared to be no good reason why we should not be self-supporting in all the requirements of the profession.

After complimenting the local sections of the Institute on their activity and acknowledging the help they had given to the council in connection with the work of the Institute, the president commented on the fact that, at a time of almost unparalleled industrial depression, less than two per cent. of the members were without employment. He thought they might draw from this the comforting inference that employers were looking more and more to science to help them in overcoming technical difficulties and in improving their manufacturing operations. He concluded his address, however, with

a note of warning. Many parents still retained the impression that chemistry afforded a rapid road, if not to wealth, at least to a comfortable competence, and that it involved a less expensive course of preparation than for other professions. A keen love of the subject was essential to success; but those who were attracted to chemistry should be prepared to face a great deal of hard and often unattractive work, and to make the very real sacrifice which a professional career inevitably involved. The course of training of the average chemical student was of a university character and made the same demands upon the financial resources of parents as that for medicine and the law.

The present position of the profession should inspire its members with feelings of pride and deep satisfaction, and should stimulate them to increased

endeavours to raise it still higher towards that position of pre-eminence which it was surely destined to occupy.

There was scarcely a department of human activity which was not influenced more or less profoundly by the discoveries and developments of chemistry, nor was there a single individual in the community whose comfort had not been increased and whole daily life had not been made happier—or, at least, more tolerable—through the beneficent operations of that science. What discoveries in chemistry the future might hold, and in what way those discoveries might still further modify the material life of man, none could say, but it was not unlikely that if any distinctive term should be applied by the historian of the future to the era on which we were now entering, he would describe it as the "Age of Chemistry."

Biology of Mosquitoes and the Disappearance of Malaria in Denmark.

AN interesting memoir on the biology of Danish Culicidæ has recently been completed by Dr. C. Wesenberg-Lund (Mem. Acad. Roy. Sc. et Lettres de Danemark, Section des Sciences, Series 8, vol. 7, No. 1, 1921). Forty forest-ponds were subjected to regular fortnightly exploration for some years, and from them twenty-five species have been obtained, twenty of which have been reared from larvæ. Among these are four species of *Ochlerotatus* known from America, but not hitherto found in Europe. Observations on the habits of the larvæ lead the author to support the general conclusion reached by other recent workers that the anal gills are best developed in those larvæ which feed at the bottom of the water. The pupæ are, as every one knows, capable of movement, but they are much more stationary than is usually believed; indeed, the author goes so far as to say that usually there is no locomotion during the whole of the pupal stage. An attempt has been made to work out the life-history of each species of Culicine from the laying of the egg onwards, and the author records many interesting observations. For instance, *Ochlerotatus communis* was found to lay its eggs singly on withered leaves or on the ground underneath these; the eggs are hatched in midwinter or early spring—many of them in April—and the imagines emerge in the first half of May. Mating takes place shortly afterwards, but the craving for blood does not arise until the latter part of June. Eggs are deposited upon dry bottoms from August to December, but do not hatch until they have passed through a period of frost. The biology of *Taenio-rhynchus Richardii* also presents features of special interest; the siphon of the larva pierces the submerged roots of aquatic plants and gains access to the air in the intercellular spaces; the siphons of the pupæ are brought into close apposition at their tips and are inserted into submerged roots.

In an important concluding chapter on the three

species of *Anopheles*—*A. plumbeus*, *bifurcatus*, and *maculipennis*, the species found also in this country—the author deals especially with the biology of *A. maculipennis*, well known as the chief carrier of malaria in Europe. He states that in Denmark this species sucks blood from domestic animals—pigs, cattle, horses—that it is seldom seen in the open, but is found, often in incredible numbers, hanging, sluggish and blood-filled, from the ceilings of pigsties, cowsheds, and stables. Only exceptionally does it suck the blood of man, whereas in Mediterranean countries it is an outdoor species feeding largely on human blood. Dr. Wesenberg-Lund considers that in Denmark *A. maculipennis*, which is there living near the northern limit of the range of the species, has ceased to be an outdoor species sucking the blood of man, and has taken to an indoor life and restricted its attacks to farm animals. In his opinion, this change in habits has been the main factor in the disappearance of malaria, the last great epidemic of which took place in Denmark in 1831.

The change in the habits of the mosquito followed an alteration in agricultural methods about a hundred years ago. Whereas previously the swine had been driven to the woods to feed on mast, they and other farm animals were thenceforward housed. The stables, etc., form so many traps which attract mosquitoes by the odour and heat of the animals within, and once within the stable the mosquitoes find all they need until the time arrives for pairing and egg-laying. Thus the connection between man and *A. maculipennis* has been broken in Denmark, and malaria was therefore bound to disappear. The author remarks that if the measurements of the length of this mosquito given by Meigen (1818), when the species presumably fed in the open and largely on man, are correct, there has been an increase in size during the intervening century, though the species is there living near the northern limit of its range.

The Unity of Anthropology.

AT the annual meeting of the Royal Anthropological Institute on January 24 the president, Dr. W. H. R. Rivers, delivered the presidential address, taking as his subject "The Unity of Anthropology."

The aim of the address was to show the unity which underlies the apparently diverse interests of the various branches of anthropology. No student of simple societies can fail to recognise this unity, for the different aspects of culture which are readily

distinguished from one another in advanced civilisations are in the simple societies so intertwined and interdependent that it is hopeless to understand any one aspect without studying the whole. It is from the students of more advanced forms of human society that we need a more complete recognition of the unity of anthropology.

The unity of ethnology and archæology was illustrated by means of recent discoveries of the Rev. C. E. Fox in the Solomon Islands, where after the