

altogether wanting; but another very interesting order, the Tilopteridæ, is well represented. In green Algæ, the large Siphonææ of the Mediterranean and other warmer seas are represented only by *Bryopsis*. Of red Algæ, the number of species and genera is inferior to that found in the Mediterranean or on the coasts of England and France; but almost all the different types of growth are well represented. Although the Baltic has, like the Mediterranean, no tides, the sea-level of Kiel harbour falls so considerably with a south wind, that many littoral Algæ are then completely exposed.

The growing-houses consist of a horse-shoe-shaped block of buildings, on one side of which is a long low house, and of a detached underground house. In designing the plan, the object specially kept in view was to furnish favourable conditions for the cultivation of all the important types of warmer climates; and the houses were therefore not built higher than seemed absolutely necessary. The chief part of the block consists of a higher and a lower cool-house, a higher and a lower hot-house, and a propagating-house. The higher houses are eight, the lower four metres in height, and the propagating-house still lower. Each of the lower houses is again divided into two, for different temperatures. The warmer division of the lower hot-house contains three basins for the culture of tropical freshwater plants. The propagating-house is, in the same way, divided into two. The underground house is a long building entirely buried, the glass roof alone projecting above the surface of the ground. The heating is effected by hot-water pipes.

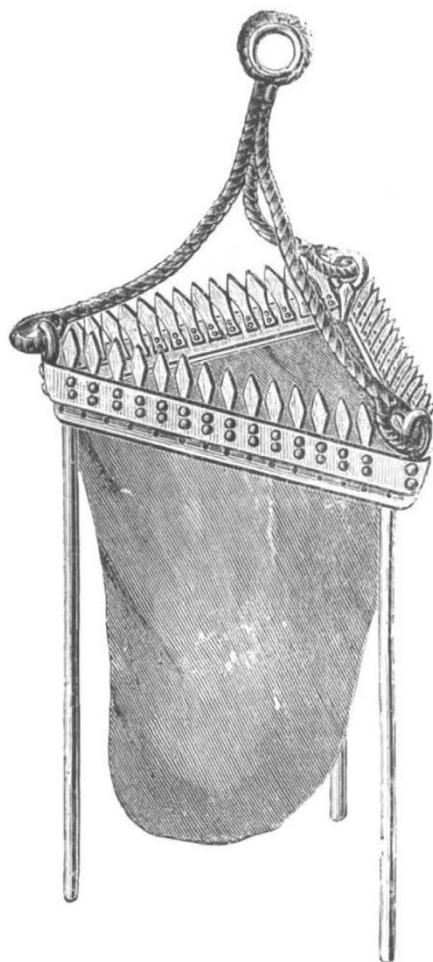
The various study-rooms are devoted partly to morphological and systematic, partly to physiological work. The former comprise a large herbarium in the top story, and four roomy work-rooms on the ground floor, in which are also kept those portions of the herbarium which are required for reference for the work in hand, and the whole of the dried Algæ. The first story is devoted to the residence of the Director. One of the work-rooms is devoted entirely to marine Algæ; each is fitted up with microscopical apparatus, and they are furnished with a very extensive reference-library. The second portion comprises a room with a small chamber opening out of it for chemico-physiological work: a room with stone floor, facing the north, for physico-physiological work; and a dark chamber with a balcony in the top story. Before the balcony a large sandstone slab is let into the wall of the building for the erection of a heliostat. In the basement story is a dynamo-machine.

For the collection of the seaweeds both row-boats and steamers are employed. For scraping the larger species off the rocks, Dr. Reinke has contrived a special dragnet, of which a drawing is appended, furnished with a row of sharp teeth at the mouth.

The culture of seaweeds presents greater difficulties in summer than in winter. They continue to grow in the Baltic at any temperature above zero C.; and, in cultivation, a low temperature is much more favourable to their growth than a high one. In the Institute they continue to fructify through the winter in the cool houses if protected from actual frost, the smaller species going through their complete cycle of development from the germinating spore; but a frequent change of the sea-water, or the addition of nutrient substances, is desirable. In summer the incidence of direct sunlight must be carefully avoided, and the temperature of the air must be kept as low as possible. For this purpose ice-cupboards have been built. Prof. Reinke has contrived a special arrangement for the cultivation of seaweeds in their native habitat. In the harbour near to the Botanic Garden, a wooden buoy is anchored, from which is suspended a wire basket by chains from 3 to 4 metres in length. In this floating aquarium the seaweeds grow exposed to their most favourable natural conditions of currents and

variations of temperature in the water during the summer months. Next spring it is proposed to build an aquarium for seaweeds for public exhibition in connection with the Institute.

The Government of Prussia has rendered great assistance in the establishment of the Botanical Institute and



Marine Station at Kiel through its Minister for Education. The Director is very anxious that, especially in the department of marine Algæ, the herbarium and library, already so rich, should be rendered still more complete, by the addition of specimens or of treatises published in journals in which it may still be deficient.

SIR ROBERT KANE, LL.D., F.R.S.

SIR ROBERT KANE was born on September 24, 1810, in Dublin. This was the fiftieth year of King George III. and the tenth of the Union. Shortly afterwards his father established chemical works on the North Wall, by the side of the River Liffey, which in time developed into important and well-known sulphuric acid and alkali works. His mother was Ellen Troy, of whose family Dr. Troy, Roman Catholic Archbishop of Dublin, was a member. Sir Robert Kane very early in his life developed a taste for chemical knowledge, and in 1828 his first paper, "On the Existence of Chlorine in the Native Peroxide of Manganese," was published, and followed by a series of contributions on kindred themes. He entered Trinity College, Dublin, in 1829, and pro-

ceeded to his B.A. degree in the spring commencements of 1835, taking the LL.D. in the summer of 1868. In 1834 he was appointed Professor of Natural Philosophy to the Dublin (now the Royal Dublin) Society, and he at this period devoted himself with great ardour to original research in the field of chemistry, as the long list of his papers in the Royal Society's list will testify. He studied in Germany during his summer vacations under both Liebig and Mitscherlich, and passed some time under Dumas at Paris. In 1831 he was elected a member of the Royal Irish Academy; he was Secretary of its Council from 1842 to 1846, and was elected President in 1877. In 1849 he was made a Fellow of the Royal Society; shortly afterwards he was selected by the Government as head of the Museum of Irish Industry, which post he held until appointed the first President of the Queen's College, Cork. He was a Fellow of the King and Queen's College of Physicians, Ireland, a Commissioner of National Education, and a Justice of the Peace, Ireland.

After over twenty-two years of hard and earnest work in the development of the Cork College, he resigned the presidency in 1873, and took up his residence in Dublin, where he died on Sunday, the 16th instant.

Sir Robert Kane, in addition to the very numerous papers above referred to, was the author of a large and most important work on the industrial resources of Ireland, a theme which he handled in a painstaking and judicious manner. In his very early days he had acquired a practical knowledge of the value and importance of many of the neglected industries of Ireland, and from his chair in the lecture theatre of the Dublin Society, he often called attention to this subject, one which throughout his long life he never lost sight of. It is not without interest to note the fact that much is owing to the Royal Dublin Society for the ready help afforded to their two Professors, now both deceased, Sir Richard Griffith and Sir Robert Kane, in their efforts to advance the industries of Ireland.

In 1841, Sir R. Kane was awarded by the Royal Society a Royal Medal for his researches into the chemical history of archil and litmus; and in 1843, the Cunningham Gold Medal of the Royal Irish Academy, for his researches on the nature and constitution of the compounds of ammonia. These memoirs will be found published in the Transactions of the respective institutions.

In recognition of his scientific labours, and on his appointment to the presidency of Queen's College, Cork, he received knighthood in 1846 from Lord Heytesbury, the then Irish Viceroy. On the passing of Mr. Fawcett's Act in 1875, which altered the constitution of the University of Dublin, and appointed a Council, Sir Robert Kane was elected one of the first Roman Catholic members of that body, a post which he held until 1885, when the late Dr. Maguire was elected.

In this brief obituary notice, it is not necessary to attempt any analysis of the scientific work accomplished by Sir Robert Kane, but it is impossible to conclude it without a tribute of respect and affection to the many high and excellent qualities of the man, who in the various positions of Professor, head of a young educational establishment, or President of an Academy, won equally, from all with whom he came in contact, regard and esteem.

NOTES.

PROF. SCHUSTER has been elected Bakerian Lecturer for the present year. The lecture is to be delivered in the apartments of the Royal Society on March 20.

LAST week Mr. Justice Kay complained that judicial time is sadly wasted over patent cases, and he declared that the smaller

and more petty the dispute the more time seemed to be expended. Now, as we have pointed out more than once, enormous waste of time is inevitable where the suitors in patent cases, especially in cases which involve scientific details, as most of them do at the present day, have to appear before a judge who is not himself a man of science. They have to begin by teaching his lordship the rudiments of that branch of science of which the disputed patent is a practical application. That our judges are painstaking, rapid, and acute pupils may readily be granted, but still time has to be consumed in the task, and there is something pathetic in the spectacle of an able and conscientious lawyer wrestling with the problems presented by the highest applications of, say, electricity or chemistry to industry, while scientific witnesses are contradicting each other all round him. We fear that judicial time will continue to be wasted so long as judges without a knowledge of science are left unaided to decide questions which demand long scientific training. There can be no change for the better until judges have sitting on the bench with them scientific assessors as they have now nava assessors, or until scientific cases are passed on as a matter of course to qualified referees as cases involving accounts are. It requires at least as much special training, and is as far outside the experience of ordinary lawyers, to settle a scientific case, as to decide whether a ship has been properly navigated, or whether a set of accounts tell in favour of a plaintiff or a defendant.

ON Tuesday evening there was some discussion in the House of Commons as to the supplemental vote of £100,000 for the purchase of a site at South Kensington for a suitable building for the housing of the science collections. Mr. Jackson explained that the extent of the land was four and a half acres, and the sum at which it was valued included a building for which the Government now paid a rent of £1500 a year, which would, of course, fall out of the Estimates when the Government became the proprietors of the land in question. No commission was to be paid to any person on either side in respect of this transaction, which was a direct one between the Commissioners of the 1851 Exhibition and the Government. Sir H. Roscoe thought it desirable that the money should be voted at once. The plot of land was the only one ever likely to be available for the purpose. Mr. Mundella said that as he had been pressing upon Governments for the last ten years the necessity for them to acquire this land, he thought that he ought to say something in defence of what the Government had done in asking for the sum on the present occasion. He did not approve of supplementary estimates, and he thought that no one would be more glad to get rid of them than the Government themselves. This question, however, had been pressing for the last ten years, because for the whole of that period the most valuable national science collections, such as no other country in the world possessed, had been housed in the most disgraceful manner. The Treasury had all along resisted the demands made upon them to sanction the expenditure necessary for the erection of a Museum to hold these collections, notwithstanding that three departmental committees had reported in favour of that expenditure. The only question, therefore, was whether the Government were getting good value for their money in making this purchase. He knew something of the value of the land, which had been fixed by eminent surveyors at £200,000, while the Government were going to get it for £70,000. The money which the Commissioners would receive in respect of the sale would be appropriated to providing scholarships for the promotion of technical education to the amount of £5000 per annum, which were to be open to all schools of every denomination in the United Kingdom. He therefore urged the Committee to agree to this proposal at once. Sir L. Playfair explained that the Commissioners of the Exhibition of 1851 had formed their estimate of