

together in fleets, and remained out on the grounds for weeks at a time, steam was introduced, and the east-side of the North Sea visited. It was a "roaring trade," and many were made wealthy by it. Now things are changed, and every one cries out that the balance has been overturned, that the fish are being caught faster than the stock is being kept up: this, in spite of what was once said as to the amount of fish which could be taken from one acre of sea-bottom. It is possible to fix close times during which salmon and trout must not be taken from certain rivers, and to hatch fry which will remain in the one district. It is another matter to apply close seasons, or fix standard sizes for areas of the open sea. From what we know of life at the sea-bottom it is pretty certain that if one of the conditions necessary for keeping up a true balance of nature is removed or greatly lessened, the proportional arrangement of the remaining fauna is also interfered with, for since marine animals prey largely upon each other it follows that if one class of devourers is removed, the devoured become more numerous, which again seriously affects other classes.

For this reason an over-fished oyster or mussel bed if left to itself, or not properly regulated, will probably never regain its former condition, a fact brought out with great clearness in the course of the evidence taken before Lord Balfour of Burleigh, at the Board of Trade Conference last June. With free swimming round fish the condition is somewhat analogous, although more knowledge is required concerning their migratory movements. If the natural balance is interfered with, the result, although at first it may be only to increase certain other forms which are also of advantage to man, will eventually appear when useless or unprofitable fishes remain in the majority, or when the appearance of a once common and useful species is no longer present in the market.

If human interference can so alter the marketable productivity of the sea, and materially lessen the incomes of a large portion of a nation, surely it becomes a duty to study the application of such sciences as deal directly with the animals concerned. If by continual fishing the only available grounds became depleted, it is by a thorough study of the actual cause and effect, and the application of the principles of natural history involved, that the only true remedy is to be found.

W. L. CALDERWOOD.

#### THE SOUTH KENSINGTON LABORATORIES AND RAILWAY.

THE friends of science throughout the country may be congratulated upon the fact that work in the laboratories of the Royal College of Science and of the City and Guilds Institute is not to be rendered impossible by the building of a railway along Exhibition Road. Sir John Kennaway, the chairman, and the members of the House of Commons Committee deserve the best thanks of the community for their unanimous rejection of the scheme even if only partly on scientific grounds. When the evidence given before the committee comes to be published there will be some curious reading. Lord Kelvin, the President of the Royal Society, informed the committee of what was at stake, and gave his opinion as to the question both of mechanical and electrical disturbance. The paid "scientific experts" in their pleading on the side of the company promoters may be said to have almost eclipsed the usual "emphasis" of statement. We may refer to this evidence later, but in the meantime the following quotation from a leader in the *Times* indicates the general opinion as to the importance of the result which has been achieved:—

"What makes the history of this Bill novel and interesting is the second line of attack adopted by its opponents. On either side of Exhibition Road stand two of the most important scientific institutions in London. One of these—the Royal

College of Science—is supported by the State; the other was founded by the City and Guilds of London for the promotion of advanced technical education. The former of these institutions, and the great collection of scientific instruments which is being formed at South Kensington, make an organised whole. This collection, which includes the earlier and the latest instruments, is invaluable both historically and practically; and is in close proximity to the lecture-halls and laboratories where use can be made of the instruments. The collection and the laboratories are used not only by many other students, but by the large number of national scholars and exhibitioners who, after the annual May examination of the Science and Art Department, are brought up from all parts of the country, chiefly at the public expense. These students, and the deserving lads who work at the City and Guilds Institute, form an important element in the situation; for to them the advent of an electrical railway was a serious peril. It was shown, and admitted, that the magnetic disturbances in the neighbourhood of the South London Railway are so great that no accurate magnetic work can be done within some hundreds of yards of it. Now the proposed Paddington and Clapham Railway would run, not some hundreds of yards from the South Kensington laboratories, but within forty feet of some of them; and there was a genuine fear on the part of the Professors that at such small distances it would be impossible not only to accurately neutralise the conflicting forces, but to prevent the astronomical instruments being affected by the earth-tremors caused by the passage of trains. This view was urged by Lord Kelvin, perhaps the greatest living authority on such matters, and by Profs. Norman Lockyer, Ayrton, Rücker, and Boys; and after a contest which lasted three days their view prevailed, and the committee found the preamble of the Bill 'Not proved.' The men of science are to be congratulated on the result. A year or more ago they successfully defended their South Kensington preserve against the invasion of Art; and it would be pitiful indeed if Science were now to be put in jeopardy by a practical application of herself. It appears that electricity cannot be studied in the neighbourhood of an electric railway; naturally, then, we cannot have an electric railway close to the great central institution where electrical science is taught at the public expense."

#### NOTES.

THE annual general meeting of the Institution of Naval Architects is being held this week in the rooms of the Society of Arts, which have been lent for the purpose. The proceedings began yesterday (Wednesday) morning, and will conclude to-morrow evening. The meeting is one of more than usual importance in the history of the Institution from the fact that the president, the Earl of Ravensworth, is resigning the position (which he has so well filled for a period of fourteen years Lord Ravensworth is the second president the Institution has had, he having succeeded to the chair on the death of Lord Hampton, who first occupied the position. The new president is Lord Brassey, whose great interest in all maritime questions well qualifies him for the post. Lord Ravensworth will not sever his connection with the Institution, as he will accept the position of a vice-president. The following is the programme of the present meeting:—Wednesday, March 22.—Morning meeting, at twelve o'clock: Annual report of Council; address by the president (the Earl of Ravensworth); on the present position of the cruiser in warfare, by Rear-Admiral S. Long; on approximate curves of stability, by W. Hök. Thursday, March 23.—Morning meeting, at twelve o'clock: Some considerations relating to the strength of bulkheads, by Dr. F. Elgar; on the measurement of wake currents, by George A. Calvert; on the new Afonaseff's formulæ for solving approximately various problems connected with the propulsion of ships, by Captain E. E. Goulaeff. Evening meeting, at seven o'clock: Some experiments on the transmission of heat through tube-plates, by A. J. Durston; some notes on the testing of boilers, by J. T. Milton. Friday, March 24.—Morning meeting, at twelve o'clock: On an apparatus for measuring and registering the vibrations of steamers, by Herr E. Otto Schlick; on the re-