

is probably due to the fact that the energy of the radiation from a molybdenum tube is largely concentrated in wave-lengths of about 0.4 and of about 0.7 Å.U., which have a very small critical angle. It was the longer wave-lengths, those in the region of 1 Å.U. and more, that were reflected at the angles of this experiment. This difference in intensity, therefore, is not contrary to Compton's results.

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St. Louis, U.S.A., June 13.

Science and Labour.

It was obviously impossible in the general article in NATURE of June 14, on the Science and Labour Conference held at Wembley last month, to devote more than a few lines to any speaker; but for this reason I have been asked by representatives of certain research associations to correct an impression which might be gathered from the summary of my remarks concerning those associations, for the initiation of which previous governments were responsible.

In justice to the scientific workers in those associations, I should be glad if I might be permitted to explain that my criticisms were levelled against the suggestion contained in the last published report of the Advisory Committee of the Privy Council on Scientific and Industrial Research, that unless more financial support were forthcoming from the manufacturers' associations, the Government could not continue them after the expiration of the original contractual period of five years.

To my mind this amounts to a confession of the failure of the *policy* of the Advisory Committee and of the failure of a great many industries to realise the importance of research. In the first place, if the policy was to succeed, the research associations should have been given a much longer period of support. Five years is a short time to devote to most important problems in research, and even when they are solved there is abundant evidence that it takes many more years for the solutions to be applied, through no fault of the research worker, and sometimes through no fault of the manufacturers.

If the idea of co-operative research for groups of manufacturers is dropped, then, however important and commercially valuable the research already done may be, the primary object has not been achieved, and in that sense the money devoted to that object has been lost. I believe, in common with the members of the Research Committee of the National Union of Scientific Workers, that research must be fostered, and the staffs who have devoted their past few years to industrial research must be protected and kept together, with or without the financial support of the manufacturers, for industry exists for the nation and not primarily for the manufacturers. I believe the policy was wrong initially and the machinery defective, but it would be disastrous if the knowledge and the experience gained by the competent research workers were not utilised for the country. A. G. CHURCH.

House of Commons.

Birds as a Geological Agent.

MR. MARTIN has directed attention in NATURE of July 5, p. 12, to the fact that birds may carry shellfish to heights considerably above sea-level, and I remember as a student being warned against a too ready assumption of elevation of the land relatively to the sea founded on the occurrence of remains of mollusca above high-water mark. But the operations of birds in the past history of the world were probably far more extensive. Their efficiency in the distribu-

tion of seeds and minute organisms over seas is now generally acknowledged, and of course we are indebted to birds for valuable deposits of guano.

It is possible, however, that they may have played an even more important part in the destruction of other forms of life. The evolution of highly predacious sea-birds in later Mesozoic times must have been fatal to many types which had been developed without provision for protection against such foes, and it seems possible that the cessation of so many groups at the close of the Cretaceous period may be attributed to this cause. The cephalopods whose careers then came to an end would appear to have passed much of their time at the surface of the sea, where they would be an easy prey. At the same time the eggs and young of many reptiles would also be exposed to attack. The chelonians may have survived because they buried their eggs, as they do still.

Prof. Bonney suggested that it was our ancestors, the small primitive mammals, that disposed of their reptile enemies in this way. It may have been, but I cannot help thinking that the Hesperornis and its comrades were better equipped for the task. The Archæopteryx and the pterodactyls were older and presumably less efficient denizens of the air.

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The Atlantic Salmon in New Zealand.

AN event of importance in the history of the acclimatisation of Salmonidæ has just recently been noted in New Zealand. For nearly sixty years New Zealand and Australia have been endeavouring to acclimatise the Atlantic salmon. (It is of interest to note that the quinnat salmon from the Californian coast is now thoroughly established in the South Island of New Zealand; recently I have identified examples from the south of the North Island.)

Fisheries' inspectors and anglers have reported that for the last two or three years *Salmo salar* was to be taken in large numbers in Lake Te Anau in Otago; but no specimens had been seen by me until recently, when Wellington fishermen took an alleged quinnat salmon in Cook Strait. This fish was examined and found to agree in most essential respects, notably the disposition of the teeth, with descriptions of *Salmo salar*. The scales, however, were smaller than commonly found by European observers. An interesting question to be decided in the future is whether we have developed our own *Salmo salar novæ-zealandiæ*, or whether we have here a chance variety which readily adapts itself to the environment.

Cook Strait is equivalent in latitude to the Spanish coast or northern part of the Mediterranean. So far as is known to science, the specimen above noted is the first Atlantic salmon ever taken in the sea in the Southern Hemisphere.

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The Isotope Effect in Line and Band Spectra.

In a recent letter to NATURE (June 7, p. 820) the use of quotation marks around the word "theory" in the fourth paragraph conveys an impression which was not intended. In the original manuscript the word was underlined, meaning that it should be italicised; but apparently this was misunderstood, and quotation marks were used instead.

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