easterly winds and severe weather which were experienced at the time.

HENRY TOYNBEE,
Marine Superintendent

Meteorological Office, London, March 27

Extracts from Meteorological Log of the Ship "Timaru," Capt. D. Fullarton

1886 March 15; Noon Position, Lat. 48° 31′ N., Long. 8° 16′ W.

"A great many small land birds about us; put about 60 into a coop, evidently tired out."

1886 March 17; Noon Position, Lat. 48° 30′ N., Long. 7° 34′ W.

"Over 50 of the birds cooped on the 15th died, though fed. Sparrows, finches, water wagtails, two different small kinds of birds, names unknown to me, one kind like a linnet, and a large bird like a starling. In all there have been on board over 70 birds, besides some that hovered about us for some time and fell into the sea exhausted."

Variable Stars

I HAVE to express my indebtedness to Mr. Castell-Evans (NATURE, March 25, p. 486) for drawing my attention to Prof. Meldola's valuable memoir of 1878. Occasionally I cannot help passing over a paper of great interest; and, much to my regret, I did not read Prof. Meldola's until to-day. According to his theory there is ". . . actual combustion taking place in the atmosphere of a slowly-cooling star previously at a temperature of dissociation." The previous existence of elements is assumed throughout the memoir; and it is these which undergo "actual combustion," and of course give rise to compounds capable of the dissociation referred to. Prof. Meldola proceeds to show that dissociation of compounds and actual combustion of elements may very well lead to a "periodically unstable chemical equilibrium."

For my part I was not writing about combustion, but about polymerisation; not about compounds, but about elements; and nothing was said about dissociation. Chemical effect, moreover, was expressed by an equation totally different in form from dissociation equations.

There is thus a perfect distinction between my work and that of Prof. Meldola. He is, so far as I am aware, the originator of the theory that the variability of a star may depend on actual combustion of elements, followed by dissociation of compounds. I regard this theory as having considerable value, and great probability. But it has obviously nothing whatever to do with my own.

EDMUND J. MILLS

Glasgow, March 27

Colours in Clouds

I AM afraid I cannot give any further details to aid Mr. Backhouse. My object was to point out that the presence of coloured fringes is not very rare, though they require suitable means to see them.

I do not think the dark blue tone is very material. Mr. Backhouse will, however, see that it implies a general absence of glare and illumination of the atmosphere in the neighbourhood of the cloud, and that is exactly the condition which I artificially made by a suitable dark glass, which stopped the glare. It is the dilution of the tints with white light which makes them faint or invisible. Of course it may be said that the dark glass will weaken the tints as well as the general light, but as a fact the tints do show better through a proper one, and reduction of glare does make colour more marked.

Nor do I think that the square or rhomboidal form is important, for I think that is only the result of the air-currents which cause the light cloud.

These colours will be oftener seen in projections from banks near the horizon, if my view be correct of the height at which they are formed, because it is only when the bank or mass of thick cloud hiding the sun is low that we see well above it. Mr. Backhouse gives enormous heights at which water could only visibly exist as minute ice-crystals, such as cause halos.

J. F. TENNANT

37, Hamilton Road, Ealing, W., March 27

The Distribution of Appendicularia

IN regard to Prof. Herdman's query concerning the distribution of *Appendicularia* it may be mentioned that this form was frequently met with near the surface of the sea during the observations for H.M. Trawling Commissioners along the east coast of Scotland. From previous observations it would seem to be prevalent, especially in summer and autumn, all round our shores, as well as to stretch far into the neighbouring seas.

W. C. MCINTOSH

St. Andrew's Marine Laboratory, March 23

THE TECHNICAL INSTITUTE

IN considering the sixth Annual Report of the Council of the City and Guilds of London Institute to the Governors, we cannot but be impressed with the substantial advance made in each of the several branches of the Institute's work.

The past year has seen the completion of the great Central Institution in Exhibition Road, the University of the system of technical education, and London may be congratulated on at last possessing an institution which is, as pointed out in the Report, comparable with, and in some respects superior to, a German Polytechnic School. Considering the thorough manner in which the workshops and laboratories in the several departments have been equipped, we think the Institute is justified in claiming that parents will be enabled to secure in England for their sons technical instruction of the same high class as has been for so long provided in the great technical colleges abroad, and moreover better adapted to the special circumstances of home industry. The Report further expresses a patriotic hope that students trained in the Central Institution will gradually occupy the places in manufacturing works, and especially in chemical works, both in Great Britain and the colonies, which have of late been almost monopolised by the Germans and Swiss.

Besides the regular courses of instruction, special series of lectures are given by the Professors of the Institution at 5 o'clock, and we have reason to know that such courses as Prof. Henrici's on the Differential and Integral Calculus for engineering students, and those by Prof. Armstrong on Carbon Compounds, and by Prof. Ayrton on Industrial Applications of Electricity, now being given, fulfil a distinctly-felt want. The same may also be said of the special courses, including that on Iron-Girder Bridge Construction, by Prof. Unwin, to be given in July.

At the Finsbury Technical College the year has been marked by the appointment of Dr. Silvanus Thompson to the office of Principal, a post the duties of which have hitherto been discharged by Mr. Philip Magnus, the Director and Secretary of the Institute, but which the enormous increase in all the branches of the Institute's work has compelled him to relinquish. It is satisfactory to note that the great success already achieved by this College, both with respect to its Day and Evening Departments, has continued, and the Institute has determined to considerably increase the accommodation at a cost of 17,500*l*. In the Evening Department greater prominence has been given to courses of instruction for persons engaged in the various branches of the building trade, laboratories for instruction in plumbing, in gas-fitting, and in metal-plate work having been arranged, as also a class for builders' quantities. There are now between 600 and 700 persons attending the courses in the Evening Department.

The branch of its work by which the Institute is most widely known, the system of technological examinations, develops rapidly. According to Mr. Magnus's present Report, 3968 candidates presented themselves for examination in May last, of whom 2168, or nearly 55 per cent., were successful in passing. Examinations were held in forty-two subjects. In four subjects included in the programme, viz. salt manufacture, oils and fats, silk manufacture, and mechanical preparation of ores, the number of candidates was below the minimum for

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