

tection. We may now doubt whether they do, at any rate in some circumstances.

In the interests, therefore, not only of radiologists, but also of suffering humanity which any curtailment of the facilities for X-ray treatment will affect, I appeal for an organised effort on the part of physicists and biologists *in collaboration* to institute research into the effect of X-rays on living tissues. I have sufficient confidence in science to feel that, as a result, methods will be devised which, while preserving the usefulness of the rays for medical purposes, will guard the devoted band of practitioners against the tragic risk which now stands revealed. I feel that in making this appeal I am discharging a duty imposed upon me by my brother.

March 25.

Since the above was written I have learned that some months ago steps were taken by the Medical Research Council to organise research on the action of radio-active rays on living tissues. With this work prominent physicists will be associated. I am confident that this collaboration will be productive of good results, and I am glad to know that the appeal I ventured to make had already been answered.

A. B. BRUCE.

March 29.

Greenland in Europe.

DURING the present month a new light has been thrown upon the Aberdeen kayak (skin-canoe) referred to in NATURE of January 13, p. 648. Fresh information upon this subject is found in a diary of a tour through Scotland in 1760 by the Rev. Francis Gastrell (born 1707; M.A. Oxon. 1728), son of a Bishop of Chester, and owner—by purchase in 1753—of New Place, Stratford-on-Avon. His diary is now preserved in the Shakespeare Museum at Stratford. In a paper read on March 10 before the Edinburgh Bibliographical Society Mr. James Sinton quoted Gastrell's statement that when visiting King's College Chapel, Old Aberdeen, on October 12, 1760, he there saw "a Canoo about seven yards long by two feet wide wh[ic]h] about thirty-two years since was driven into the Don with a man in it who was all over hairy & spoke a language wh[ic]h] no person there could interpret; he lived but three days, tho all possible care was taken to recover him." This canoe is now in the anthropological museum at Marischal College, Aberdeen. Its exact length is 17 ft. 9 in., its greatest breadth being scarcely 18 in. and its weight 34 lb. Francis Douglas, who saw it in or about the year 1782, describes it as "a canoe taken at sea, with an Indian man in it, about the beginning of this century. He was brought alive to Aberdeen, but died soon after his arrival, and could give no account of himself."

These two statements do not coincide, but there can be little doubt that they relate to the same individual. The hairiness of which Gastrell speaks suggests a non-Mongolian type, but it might only mean an imperfect recollection of the fur hood, shirt, and breeches worn by kayak-men. A similar canoe, captured in Orkney waters, and preserved in Edinburgh in 1696, had with it "the shirt of the barbarous man that was in the boat." Dr. James Wallace (F.R.S. Lond.), writing in 1700, says that "there is another of their boats in the Church of Burra in Orkney." In the same year the Rev. John Brand states that such canoes and canoe-men were then frequently seen upon the coasts of Orkney, "as one about a year ago on Stronsay, and another within these few months on Westray—a gentleman with many others in the Isle

looking on him nigh to the shore,—but when any endeavour to apprehend them they flee away most swiftly."

DAVID MACRITCHIE.

4 Archibald Place, Edinburgh, March 21.

The Peltier Effect and Low-temperature Research.

WITH further reference to the suggestions of Mr. Campbell Swinton and Sir Oliver Lodge contained in NATURE of March 10 and 17 that the Peltier effect may disappear at a very low temperature, this appears very improbable from the fact that, as long ago pointed out by myself, there is a continuous transition between metals and non-metals, and this distinction between them does not vanish at low temperatures. Consequently, pairs of elements must always exist with electrothermic differences. The nearly "perfect" metal may become a "perfect" conductor of heat and electricity, and the nearly "perfect" non-metal may become a "perfect" non-conductor at low enough temperatures, but the intermediately graded elements would become neither perfect conductors nor absolute non-conductors, but would behave much like certain elements at ordinary temperatures. The periodic law would enable physicists to predict almost with certainty which elements would exhibit the desired effect best at low temperatures.

It may repay physicists who intend to study these effects to look up papers written by me many years ago, e.g. "Some Remarks on the Connection between Metals and Non-Metals," etc., which occur in the *Chemical News* during the years 1903, 1904, and 1905. Also my book "Researches on the Affinities of the Elements and on the Causes of the Chemical Similarity of Elements and Compounds" (1905). I have been hoping for the opportunity of revising the latter and bringing it up to date, but unfortunately have always been overwhelmed with technical work.

GEOFFREY MARTIN.

109 Corporation Street, Manchester,
March 22.

Relativity and the Velocity of Light.

THE great interest of Mr. Jeans's letter on this subject in NATURE of March 10 is, I think, sufficient justification for my letter by which it was evoked.

The argument used by Mr. Jeans to support the proposition that it can be shown that both on the outward and on the inward journey light travels with the same constant velocity is, to me, difficult to follow. Majorana's experiments deal respectively with a source and a reflecting mirror moving relatively to the observer, whereas in the Michelson-Morley experiment both are at rest with the observer. I cannot then see the bearing of Majorana's results upon the question whether β and α remain unchanged in the case given by Mr. Jeans.

I am sorry I misunderstood the words used by Mr. Jeans in his article in NATURE of February 17 to imply a belief in the possibility of measuring the velocity of light in a unidirectional course. It appears to me, however, that the truth of this proposition is involved in the affirmation of the proposition referred to in the paragraph above; for the mean velocity of light on its outward and return journeys after reflection from a mirror can be measured. If also its constancy outwardly and inwardly can be affirmed, does it not follow that the velocity on a unidirectional course becomes known, contrary to the principle of relativity?

C. O. BARTNUM.

32 Willoughby Road, Hampstead, March 15.