forming the connecting link of a sentence must have been dropped. What I intended to say, without the slightest notion of giving a "technical or scientific" opinion, was, "The iron is alloyed in crucibles, formed with certain clays and a preparation of plumbago." The words italicised disappeared in some mysterious way. The next of my idiotic sentences goes on to talk about the crucibles, or "*creusets*," as, to the great scandal of Mr. Forbes, I ventured to call them. If I could stop here, an humble apology for my fault might, perhaps, serve my purpose, but, alas! I have more to answer for. Vaguely dreaming of the foot-pound, I actually wrote kilometre for kilogramme, when speaking of the power of the new steam hammer; and, worst of all, I also wrote "Sheffield Gun Metal."

Can I ever hope to be forgiven when thus I write myself down an ass?

MEDICUS

P.S.—As to the question whether Krupp invented the process employed at his factory, I offer no opinion "scientific" or ordinary. I only repeat the impression which prevails.

FURTHER NOTES ON CERATODUS

SINCE the article on *Ceratodus* (published in NATURE, Nos. 99 and 100), was written I have examined a mature female, transmitted, with other examples, by the Trustees of the Sydney Museum to the National Collection, and am enabled to make the following additions:—

1. The oviduct in its developed conditions is, with regard to its internal structure, surprisingly similar to that of *Menopoma*.

2. The ova are expelled through the oviduct, and not through the peritoneal slits; they receive in the oviduct a coating of an albuminous substance as in Batrachians.

3. The caudal termination of the vertebral column is subject to individual variation. In one example the neural and hæmal elements are continued far beyond the notochord, and are confluent into a tapering band, which is segmented, as is the case in some specimens of *Dipterus* or *Ctenodus*.

ALBERT GÜNTHER

ON THE BENDING OF GLACIER ICE *

MR. MATTHEWS and Mr. Froude had supported long rectangles of ordinary ice at the two ends, weighted them in the centre, and thus caused them to bend. The ice employed, if I recollect right, was of a temperature some degrees below the freezing point, and in my little Alpine book recently published I expressed a hope that similar experiments might be made with glacier ice. I have been trying my hand at such experiments. The ice first employed was from the end of the Morteratsch Glacier, and when cut appeared clear and continuous. A little exposure, however, showed it to be disintegrated, being composed of those curious jointed polyhedra into which glacier ice generally resolves itself when yielding to warmth. Still, when properly supported and weighted, a long stout rectangle of such ice showed, after twelve hours, signs of bending.

I afterwards resorted to the ice of the sand cones, which, as you know, is unusually firm. From it rectangles were taken from three to four feet long, about six inches wide, and four inches deep. Supported and weighted for a considerable time, no satisfactory evidence of bending appeared; the bars broke before any decided bending took place. Smaller bars were then employed. Two of these were placed across the mouth of an open square box, their ends being supported by the sides of the box. They formed a cross, and a clear interval of at least an eighth of an inch existed between them where they crossed. The upper one was carefully weighted with a block of ice; after two hours it had sunk down, and

was found frozen to the under one. They were then separated, and one of them was allowed to remain supported at the ends and weighted by ice at the middle. In a few hours it had bent into a curve, the versed sine of which from a chord uniting the two ends was, at least, two inches. In fact, when the rectangles are thin, and the weight carefully laid on, flexure commences very soon, and may by cautious manipulation be rendered very considerable. I think Mr. Froude told me that in his experiment the molecules were "in torture," and that they in great part recovered their positions when the weight was removed. In the foregoing experiments the flexure was permanent.

I tried to bend the rectangle just referred to back again by reversing its position and weighting it with the same block of ice. But whether owing to my want of delicacy in putting on the weight, or through the intrinsic brittleness of the substance itself, it snapped sharply asunder.

I left in your hands when quitting London an exceedingly interesting paper by Prof. Bianconi, in which are figured the results of various experiments on the bending of, I think, lake ice. The foregoing experiments on glacier ice confirm his results.

August 4

JOHN TYNDALL

I may add that various experiments were subsequently made, and a means discovered of rendering the bending very speedily visible. I hope before long to return to the subject.—J. T., September 28

THE MIGRATION OF QUAIL

THE fact of this little bird having visited England this year in such numbers appears to have attracted the attention of naturalists as well as sportsmen. In the columns of the *Field* may be found a census giving particulars of this migration. And it will appear a curious coincidence when I mention that there has been here a greater migration of quail this year than ever remembered before. Where they come from is somewhat mysterious. They have been shot in hundreds in some paddocks, and found as numerous as ever in ten days. I can only account for it by stating that it has been a most remarkable year for grass, and consequently cover was good; and this does not appear conclusive, for the grass has been good all over the country for hundreds of miles towards the north, from which direction some appear to think they come. They are found generally in paddocks, where thistles grow. Can there be any common cause affecting these facts?

Melbourne, August 10

AUSTRAL-ALPINE

JARDIN D'ESSAI, ALGER

IN 1832 the then French Government conceived the idea of forming near the town of Algiers a botanical garden, in which all plants likely to be easily grown in Algeria, and which might be useful either for their ornamentation, or from their economic value, should be kept for distribution or for sale. A portion of ground situated between the sea and the public road, and occupying the place of an old *hamma* or marsh, was selected for this purpose, which is about two miles from the town. In 1867 the Emperor of the French conceded this establishment to the "Société Générale Algérienne," under whose auspices, but under the direct superintendence of M. Auguste Rivière, the gardens at present are.

In addition to the level swamp, the gardens now also occupy the slope of a low hill on the opposite side of the road. The level ground is laid out in alleys which open out into a circular boulevard which surrounds the whole garden. Carriages are admitted to the circular drive only, foot passengers to the cross walks. A stream of fresh water runs through the grounds, forming in one place a small lake.

* The following is an extract from a note addressed to Prof. Hirst, and sent from Pontresina in the hope that it would reach Edinburgh in sufficient time to be communicated to Section A of the British Association. It was a few hours too late.—J. T.