often throws up clustering bunches of canes that reach a height of sixteen feet in one season. Associated with *Arundo conspicua* and *Gynecium argentum*, the above interesting and handsome plants give quite a tropical aspect to some of the hill-sides of this northern county.   WILLIAM INGRAM

Belvoir, December 20

The Appulse of Jupiter to a Fixed Star on November 20

REFERRING to a request appearing in NATURE, vol. xxiii. p. 158, I may say that the approach of Jupiter to B.D. + 2·97 was well observed here, and I found that the star, when perpendicular to the belts, was 4″·05 distant from the northern limb. The definition was good, and the measure, I should say, pretty exact.

It was a strange and beautiful sight, Jupiter appearing with *five* satellites, though, at the same time, the different aspect of the star compared with that of the moons was very striking. The light of the former was however very sensibly affected by the glow of the great disk near it, and it looked no more than 10 magnitude.   JOHN BIRMINGHAM

Millbrook, Tuam

British Earthquakes

MAY I ask leave to offer a few remarks on the leading article on British Earthquakes which appeared in NATURE, vol. xxiii. p. 117. The author brings out very strongly the apparent connection between great lines of jointing or faulting and earthquake movements, and points out the great fault which traverses Scotland from sea to sea as a case in point. Now I had this same question before the British Association this year, and exhibited a map illustrative thereof. I had further, following up a theory submitted by me to the Royal Irish Academy, on the Correlation of Coast-Line Directions, and published by that body, drawn up on a Geikie's Geological Map of Scotland certain of those correlated lines, and on a smaller map of the British Isles had indicated both the lines in question and the localities wherein earthquakes have been noticed in later times, more essentially since 1860. One of those lines crosses the district about Comrie, and at the moment (August, 1880) could hardly be pointed out as in any notable way supporting the connection sought to be established between coast-line directions and earthquake localities. But the recent earthquakes in the north of Ireland and in Scotland go far to do this, as the direction shown by me both agrees with the great fault mentioned by the author of the paper on British Earthquakes in direction, and also fairly shows the direction of the earthquake band or zone, which apparently extends from Londonderry across Scotland. This direction is exactly at 40° with the coast-line direction between Carnsore Point and Wicklow Head, as shown on the accompanying map.

I may add that having had occasion to examine Prof. Höfer's memoir on the "Erdbeben Kärntens und deren Stosilinien," and to compare his lines with those given on the map of Europe exhibited by me at the British Association meeting of this year, I find some very remarkable concordances as regards direction, which, having submitted to him, he quite recognised. I consider therefore that this memoir, Prof. Geikie's very remarkable article on the Volcanoes of North-Western Europe, and this late article on British Earthquakes, all point more and more distinctly to the importance of jointing and fissuring in connection with volcanic and earthquake action, and so far go in support of the theory submitted by me.   J. P. O'REILLY

Royal College of Sciences, Dublin, December 14

A General Theorem in Kinematics

I AM very much obliged to Prof. Everett and Mr. J. J. Walker for having taken the trouble to point out that the theorem which I communicated to NATURE is, *so far as it relates to uniplanar motion*, already known. I am indebted to Prof. Unwin for more complete information on the subject. He tells me that the theorem (for the uniplanar case) has been employed by German engineers in the discussion of stresses produced in moving pieces —exactly the use of the theorem which naturally presents itself. Moreover, the theorem (for the uniplanar case) will be found in § 198 of Collignon's "Cinématique," as well as in other foreign books, but not, so far as my information goes, in the work of any English author. None of your correspondents or of mine are however able to say that the *general* case was previously known.

The simple method of proof given by Prof. Everett is that which I had used nearly a month ago in a paper which I wrote (and have since read) for the London Mathematical Society.

I may mention in connection with this subject a kinematical theorem which Mr. Kempe communicated to NATURE some time back. I find that this theorem comes properly under a general theorem which holds for the areas of roulettes. It can be easily proved that the areas of the most general kinds of roulettes follow exactly the law of circular transformation which Steiner proved to hold good for the areas of pedals. For this theorem of Steiner's see Williamson's "Integral Calculus," p. 202, third ed.

Mr. Kempe's theorem (as also Holditch's) is an immediate consequence, since every possible uniplanar displacement of a body can be produced by epicycloidal motion. Mr. Williamson, justly describing Mr. Kempe's as "a singularly elegant theorem" (*ibid.* p. 210), arrives at it quite differently.

                          GEORGE M. MINCHIN

Royal Engineering College, Cooper's Hill, December 13

A Correction

IN NATURE, vol. xxiii. p. 44, Prof. Young has published some experiments proving that the thermo-electric power of a platinum-iron couple is to be observed in vacuo as well as in air; this fact is said to be contradictory to the results given in my papers. I presume that some error has caused this statement, as I never and nowhere asserted that the thermo-electric power is dependent on the surrounding gases. I have, on the contrary, stated (*Phil. Mag.*, October 1880, p. 294) that no such influence has been hitherto observed. Thus the experiments of Prof. Young do in no way contradict my views.

University of Vienna   FRANZ EXNER

Jelly Fish

ON November 3, in the B.I.S.N. Co.'s steamer *Arcot*, Capt. Stevenson, while in lat. 16° 50′ N., long. 55° 45′ E., with the Kuriyan-muriyan islands to the north, thirty to forty miles and three days out from Aden to Karachi, we passed through a vast quantity of brown anemones, the ordinary bell-shaped jelly-fish and strange worm-like (apparently) jelly-fish, floating on and just below the surface. These were first noticed about five in the afternoon, and we were still amongst them when we went below to dinner at six, the vessel steaming about eight knots. The anemones were only peculiar in that they appeared to be rounded at the base and without the ordinary flat surface for adhering to rock or stone; they were in vast numbers and had the feelers expanded. The worm-like or centipede-like jelly-fish were from six to eight feet long and as thick as a man's wrist. They appeared sometimes singly, sometimes many twisted together; they were in slow feeble snake-like motion. All agreed that they were ribbed in appearance; but there was a difference of opinion as to the colour. It was described by some as that of the sea, by others as violet, brown, or purple. Each apparent rib was divided from those next it by a bar of lighter colour.

At night the sea was bright with many phosphoric lights of many shapes, so we were perhaps still passing through the mass. There was a dead calm at the time.

The captain has read this account and stated it to be fairly correct.   F. C. CONSTABLE

Karachi, Sind, November 8

MR. PLIMSOLL'S CURE FOR COLLIERY EXPLOSIONS

LET us suppose a person actuated by very powerful motives, who desires to solve the most difficult mathematical problem of the day, and who, after having neglected to acquire the most rudimentary knowledge of his subject, and after having contented himself with seeking the company of land surveyors, and trying to entrap civil engineers into conversations about it, suddenly startles the world with the cry of Eureka! Eureka! Eureka! should we, or should we not, be inclined to regard his solution with respect?

Mr. Plimsoll has done for the mining world exactly what our suppositious person would have accomplished for the mathematical one. In an article contained in the December