dows, bells were rung violently, windows were thrown up, and cries of 'Thieves' and 'Police' were shouted. But there was no earthquake, there were no thieves, although there were the police, by whom the sounds were distinctly heard. It was some time before all was again quiet, and not even then in many a household until processions in curious garb, armed with sticks, pokers, shovels, and fire-irons, in place of fire-arms, had paraded from kitchen to garret in search of the supposed nocturnal marauders. And now the cause of all this has been discovered. It was the coastguard squadron, a few miles out at sea, having what is termed their night quarter exercise—a turn-out drill in the middle of the night, so as to fit the men for action in an emergency."

E. A. PANKHURST

Church Hill, Brighton, September 11

A Fossiliferous Boulder

DURING a visit I made in July last to a respected friend at Dinnington, Northumberland, I observed a travelled boulder in the corner of his field, and, on closer inspection, found that it contained a number of ammonites, encrinurites, and the detached portions of the stems of the stone lily, usually found in the Lias in the vicinity of Whitby. The composition of the boulder, which was about two feet in length, and of proportionate breadth and depth, was basaltic or trap, and had evidently taken up the fossils when in a state of fusion; some of the ammonites being compressed or disturbed. Upon inquiry, it appeared that my friend had sunk for a well, and came at the depth of about twelve feet upon the native freestone rock, upon which this boulder was found. Of course it must have been transported to its place of deposit by ice during the glacial period of our world's history, and then covered over by the subsequent boulder-clay; but from whence was it transported? From Yorkshire or the Hebrides?

I also visited in the immediate vicinity what was formerly the site of an ancient lake of about 1,200 acres, Prestwick Car. This sheet of water was drained a few years ago into the Pont rivulet, and the bed of the old lake is now, through the enterprise and skilful industry of the farmer, covered by luxuriant crops of oats with magnificent heads, approaching six feet in height, and immense thickness of stem. The land, as might be expected, is a deep bog earth; the surface, however, is remarkably light, apparently a leaf soil, and easily disturbed, or blown away by the winds. The remarkable point here was, that after the drainage had been completed, the earth solidified and put under culture, the roots and a portion of the stems of trees broken off near the roots, appeared as if rising from the earth, the prior existence of which was unseen and unknown, indicating the remains of a primeval forest: no branches appeared. The wood is that of the alder. Was not the lake originally formed by the destruction of this ancient forest by the agency of wind?

Barbourne, Worcester, Sept. 9

J. BROUGH POW

A Vital Question

PRAY do not mind if I am alone in my venturesomeness, but in the name of Science, not that which is falsely so called, but that which depends upon evidence, let me protest against the doctrine contained in the concluding portion of Sir W. Thomson's address. Scholastic theology has for me nothing worse than the declaration, made on the strength of a mere dogma, that our dear mother earth is no mother at all, but absolutely in capable of filling any function in the production of her own children. The dogma that life can only proceed from life, a pearl, when analysed, like too many another dogma, but a meaningless jangle of words.

Here are three counter-propositions, which I advance in all confidence of their soundness:—

1. We know nothing whatever of the nature of life to justify us in asserting its absolute difference in kind from many other phenomena, as of magnetism, chemistry, or Nature in general.

2. If, as astronomers hold, all the bodies composing the solar system are derived from the sun, they must contain identical elements. That their elements are actually identical is, moreover, indicated by the spectroscopic. So that if those elements be incapable of producing life on this planet, they must be incapable of producing it elsewhere. However much reason there may be to suppose they have not produced life on any particular instance as yet, as, e.g., in our satellite, that is no reason against

their doing so in the future. If Sir William's object had been to gain time for existing evolutions, I could have forgiven him, but there was no hint of this.

3. To speak of life as necessary to the production of life, is to ignore all that Science has ascertained respecting the transference and convertibility of force, and to fall back upon the anthropomorphism of the theologians, only with the difference, in this case, that it is not Jupiter, but "the stone that fell down from Jupiter," whom we are to hail as our father and mother. Moreover, to speak of life as necessary to the production of life, is to assume that we already know the limits of Nature's productive power; and to assert that life is not a natural product at all, is to restrict our definition of Nature by some arbitrary limit which excludes the most important functions of Nature.

Doubtless it would be a very pretty idea to regard the planets as so many orchids in the flower-garden of the Universe, and the meteorites as their fertilising bees; but Sir W. Thomson entertains no such pleasing sentiment respecting the earth. He degrades this unhappy planet far below the meteorite.

Once upon a time when astray with a companion in a far Western wilderness, we were reduced to eating anything that we could find. On the question arising whether rattlesnakes were fit to eat, I propounded the dictum that whatever could itself live ought to be able to support life in another, and our experience, so far as it went, confirmed the saying. I venture to vary it for Sir W. Thomson's benefit, and to suggest that whatever can support life, as this earth does, can in all probability produce it.

Loving, as I do, both the world and the things which are in the world, I hope you will not refuse me a corner for this sorrowing dissent from a doctrine so deprecatory of the world, and whose enunciation cannot fail to give occasion to the many enemies of Science to blaspheme its sacred name on account of the eccentricities of its professors.

EDWARD MAITLAND

Oxford and Cambridge Club

Draining a Cause of Excessive Droughts

WILL you kindly allow me through the medium of NATURE to ask whether any of my fellow readers can give me any *actually observed facts*, to show that draining is justly considered an item in the sum of causes which have given rise to the lengthened periods of drought that we have experienced in these islands for the last few years. As a matter of reasoning I believe it is generally admitted that such is the case, for ample evidence has been produced by actual experiment to show that draining raises the temperature of the land and the air above it; and if so, it would lessen the chance of the vapour suspended in the atmosphere being condensed. Such observed facts are on record as regards the cutting of forests, e.g., NATURE, vol. iv. p. 51, "Buchan's Meteorology," p. 88, and if my memory does not fail me, some information was given on both these points in a previous volume of NATURE, but I am at present unable to lay my hands upon it, though I have glanced over the pages as well as the index.

If any one will kindly furnish me with the information, which may also be of interest to others, or refer me to a work not difficult of access, I shall be extremely obliged.

THOMAS FAWCETT

Rainbow

ON Friday, the 8th July, about four P.M., as I was driving across the Bog of Allen, about eight miles from Edenderry, I observed the most brilliant rainbow I have ever beheld either in Europe or India. It appeared in the North, and was low down on the flat horizon, being an arc of 60° with the horizon as its chord. The ends of the bow were nearly due E. and W. The spectrum was intensely vivid. A second bow, imperfect towards the centre, shortly afterwards appeared above it; in perhaps five minutes, the E. end of this upper bow faded, and immediately I perceived for a corresponding length of the true rainbow, bordering the violet, a well-defined rim of sea-green, this bounded by a band of almost mauve-coloured violet, which shaded off into the indigo sky.

The under-side of the opposite end of the bow (above which the portion of the upper bow was still visible) presented no such appearance.

Next day I learnt that, about the same hour, a thunderstorm