The term meteoric dust is used because it is commonly applied to the materials forming the subject of this paper; it is not intended to state that the dusts are necessarily of cosmic or extra-terrestrial origin. The specimens described and exhibited were from Moruya (fell on Dec. 15th, 1880), from Uralla (fell on Dec. 14th, 1882), from near Broken Hill (fell 1896), from Menindie (fell June 17th, 1899), and Pambula (fell Oct. 5th, 1899). Dust from the roof-beams and mud from a covered cistern at the University and from the roof of the Observatory, Sydney, all three were collected in 1882. All the dusts are of a reddish colour except those from the University and Observatory, which are grey. The red dusts are mainly silicious and argillaceous, and look as if they had come from dried-up water-holes; they contain a variety of organic and mineral matters such as might be expected from such a source, and in addition magnetite and metallic iron; the latter contains cobalt and nickel, which seems to indicate that the dusts contain some cosmic or extra-terrestrial materials, part of which may have settled down and become mingled with the undoubted superficial terrestrial deposits and part may have been derived directly from the atmosphere. The University and Observatory dusts also yielded magnetite and metallic iron containing cobalt and nickel, and the University dust yielded particles of gold; the Observatory dust has yet to be tested. The Moruya, Menindie, and Barrier red dusts yielded particles of gold; the others have yet to be examined. Fuller information is given in the paper as to the constituents and chemical composition of the dusts, and analyses of volcanic and other dusts for comparison.

Professor Liversidge also exhibited under the microscope particles of a malleable yellow metal, which have all the appearance of gold, obtained from certain Australian and European meteorites (siderolites). The presence of gold in meteorites bears upon the presence of gold in 'meteoric' dusts, and it is also of great interest in connection with the presence of gold upon the earth and in sea-water, inasmuch as meteorites and the dust of meteorites are constantly falling upon the earth to the extent of probably many million tons a year. Further information upon the question of the presence of gold in meteorites will be given shortly in a subsequent paper.

CORRESPONDENCE.

HYDROTHERMAL METAMORPHISM.

Sir,—I crave a few words of explanation of my paper on Hydrothermal Metamorphism noticed in your current number. The ulterior object of the paper was to elicit a discussion on the singular fact that in the Devon schists albite containing fluid inclusions is intimately associated with chlorite and other water-bearing minerals; and this in rocks which show no sign of any high temperature, far less of fusion. So far as I am aware, albite has only been produced artificially in the crucible at a high temperature. After my little paper was written I found to my

dismay that it would appear to intrude on the subject of the President's Address, and on hearing the address I found that the President actually discussed the fusion temperature of albite from one extreme, whereas I had hoped to coax a discussion on the other extreme. Thus, instead of being able to ask the opinion of the section, I was obliged with all emphasis to warn the section not to allow my paper to be an excuse for discussing the President's views, and so transgress the inviolable custom of the British Association, not to attack a chairman when he is not free to defend himself. My paper being sent in too late for me to supply an abstract, the Recorder of Section C most kindly wrote the excellent epitome you have published, and therein stereotyped an undoubted ambiguity which I subsequently corrected in reading. Of course, hornblende does not always contain water, as might be inferred from my manuscript; but certain varieties are said to do so. But in the event of the hornblende being rejected, the chlorite, epidote, zoisite, and the fluid inclusions in the albite, are sufficient to prove my point.

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'SONOROUS' SAND.

Sir,—In September last I paid a visit to Tenby, and while there made a point of seeing the notable junction between the Old Red and Carboniferous series of rocks. The section is met with a few miles to the west of Tenby, in a small bay called Skrinkle Haven. I was doubly repaid for the effort of getting to this not very accessible spot by seeing a most interesting geological section, and finding musical notes emitted from some of the sand traversed while examining the junction.

I had never met with the phenomenon before, and, being preoccupied, at first attributed the sounds to a knocking together of articles on my person; but, giving my attention to it, found the sounds arose from my feet at each step, as my boots sank into the sand. The notes were clear and metallic, and were emitted only from the dry, loose sand above the range of the tide. I did not test its 'musical' property in any other way than walking in it, but found an increase in the sound on thrusting the heel deeper into the sand.

In *Nature*, vol. xxxix, there are references made to investigations and explanations in regard to these sounds. Dr. Julian and Professor Bolton attribute them to "a film of condensed air round each grain of sand, which acts as an elastic cushion, and enables the sand to vibrate when disturbed," while Mr. C. Carus Wilson considers the sound to be caused by friction, "the cumulative effect of numerous vibrating particles that becomes audible."

In accordance with Mr. Wilson's theory, the grains in the patch of sand which emitted the sounds "were rounded, polished, and free from fine fragments; they must have had sufficient amount of 'play' to enable them to slide one against the other; the grains were perfectly clean, and possessed a certain degree of uniformity, within a certain range of size" (vide *Nature*, vol. xliv, p. 322).