to similar trains of thought and those to analogous results.

SACRED SECRET SOCIETIES.

IN *L'Anthropologie* for October there are accounts of two sacred secret societies which illustrate the curious aberrations of religious doctrines, unrestrained by reason.

The society of 'Leopards' exists in Sierra Leone. Their god is represented by a manioc root, stuffed with various holy objects. They are cannibalistic, and the price of initiation is to induce some member of the applicant's family to wander into the midst of the assembly, there to be slain and eaten. The reward is to receive this fetish, which will bring good luck.

The other society, already mentioned by some writers, is that of the Aioi, of Tahiti and some other Polynesian islands. It is composed of both men and women, some belonging to the highest castes. It is devoted to the genesiac cult in its most abnormal forms, and one of its laws is that the members must scrupulously avoid the reproduction of their kind.

The incredibly obscene groups in pottery and metal excavated from the tombs of the Yuncas in Peru can probably be explained by the existence among them of some such religious society.

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NOTES ON INORGANIC CHEMISTRY.

SEVERAL years ago Professor Dunnington, of the University of Virginia, showed that the element titanium was much more widely distributed in nature than had been supposed. Indeed, not only all rock masses, but even all soils, examined by him were found to contain considerable quantities. More recently Professor Charles E. Wait, of the University of Tennessee, has had occasion to analyze the ashes of various vegetable substances for titanium and finds it to be an invariable constituent. The ash of oak contains 0.31 per cent., of apple wood 0.11 per cent., and of cotton-seed meal 0.02 per cent. In coals titanium was found present to the extent of from nearly one per cent. in bituminous coals to over two and a-half per cent. in Pennsylvania anthracite. Titanium thus appears to be one of the most widely distributed elements and it is not improbable that analyses will show that it is also found in animals.

IN the last *Nature* Professor Spencer Pickering comes to the support of Professor Armstrong in his attack upon the theory of electrolytic dissociation of salts in solution. In the course of his article he says: "For a theory to be acceptable it should, at the very least, be reasonably probable, and should not violate any fundamental and well established facts; it should stand the test of any apparently crucial experiments * * * and, I think we may add, it should give some explanation, not simply of the behavior of matter in the condition in question, but also of why matter ever assumes such a condition. The theories of osmotic pressure and ionic dissociation, I believe, have not done this."

THE opening of the Davy-Faraday Research Laboratory in London should mark an epoch in chemical science in Great Britain. This laboratory has been established by Dr. Ludwig Mond at a cost of half a million dollars. $170,000 has been expended in the building and its equipment, while $330,000 remains as an endowment fund. The laboratory is furnished with the most modern instruments and appliances for researches in pure and physical chemistry. In opening the laboratory Dr. Mond said he had named it the Davy-Faraday Research Laboratory, in perpetual memory of those two great pioneers of science who carried out their world-famed and epoch-making researches almost on

that spot, and whose example, he hoped, would stimulate and inspire every one who came to work under that roof. The laboratory is open to persons of either sex and of any nationality who can satisfy the laboratory committee that they are fully qualified to undertake original scientific research in pure or physical chemistry, preference being given to those who have already published original work. The directors of the laboratory are Lord Rayleigh and Professor Dewar.

In the *Comptes Rendus* for December 2d Stanislas Meunier recorded observations on some asphaltic rocks and on the origin of asphalt. From the behavior of bitumenous rocks towards solvents the conclusion is drawn that bitumen is the result of purely mineral reactions, as of the double decomposition of metallic carbids and water.

J. L. H.

ASTRONOMICAL NOTES.

The *Astronomische Nachrichten* of January 4th contains a description by Professor Deichmüller, of a new instrument devised by him for fixing the position of the zenith with a meridian circle. The telescope is pointed approximately at the zenith, and the new instrument is mounted above the object glass. It consists of a circular disc of parallel surfaced glass floating in mercury. The vessel containing the mercury is so shaped that the glass is supported at its edges only, so that it is possible to get an unobstructed view of the sky through the middle portion of the glass. It is thus possible to observe the reflected image of the wires, and then to transfer the position of the zenith to the sky without the use of any graduated circle. The instrument is ingenious, and the principle is novel. Prof. Deichmüller gives some very accordant observations made with it. As in the case of all the floating collimators, however, it will be necessary to make sure that the opposite sides of the mercury do not differ in temperature.

The December Monthly Notices of the Royal Astronomical Society contains an interesting article by Prof. Rambaut, of Dublin, on a method of correcting the rate of an equatorial clock, so as to make the telescope follow very nearly the motion of the stars for the purposes of photography. Professor Rambaut gives formulæ for calculating the effect of refraction upon the apparent rate of diurnal motion of the stars, and shows how this effect can be very nearly compensated by varying the clock rate. In this way the work of the observer can be made much easier.

The Washburn Observatory of the University of Wisconsin has issued Vol. X., Part I., of its Publications. It contains a series of double-star observations by Professor Geo. C. Comstock.

The director's report of the Harvard College Observatory for the year 1896 has appeared. From it we learn that the new Bruce photographic telescope has been transported to Peru, and successfully mounted at Arequipa.

H. J.

SCIENTIFIC NOTES AND NEWS.

Mr. Charles D. Walcott, the Director of the United States Geological Survey, has been appointed Acting Assistant Secretary of the Smithsonian Institution, with duties confined to the charge of the National Museum. It is understood that Mr. Walcott has not taken the new office permanently and that he does not expect to give his full time to the duties of administration of the affairs of the Museum, these being left largely to the present permanent staff of that institution. He will exercise a general supervision and direction of the affairs of the Museum in addition to his present duties as Director of the Geological Survey. Mr. Walcott is well acquainted with the administration of the National Museum. For the past twelve years he has held the position of Honorary Curator in the Museum and for