

air, he tried this with perfect success in Uruguay; he supposes that curiosity was the motive. A large coral upon the copper of a man-of-war, Capt. King states, is not unprecedented; he remembers in 1839 seeing one of the size and shape of a large cauliflower, taken from the bottom of a vessel of the Indian navy, in the Persian Gulf, by a pearl-diver.

PROF. GRAHAM BELL has promised to read a paper before the Society of Arts upon his "Photophone" at the ordinary meeting on Wednesday, December 1. As considerable interest is likely to attach to this paper it is announced that only members of the Society can be admitted, and that they will be required to provide themselves with special tickets issued for the occasion.

WE referred in the "Physical Notes" of our issue of November 11 to a paper read before the American Association at Boston by Prof. Young, which combated certain phenomena in thermo electricity which were alleged to have been observed by Herr Exner. We have since received from Mr. T. Brown of Belfast a letter in which, on behalf of Prof. Franz Exner of Vienna, he expressly disavows any such discoveries as those which Prof. Young has set himself to refute. We readily accord to our courteous correspondent the opportunity for this disavowal, since any reflections cast even inadvertently upon the accuracy of Prof. Franz Exner's work might unfairly prejudice readers against the general reliability of the researches which he has published in another department of science, and which our readers are aware are just now exciting considerable attention.

IN NATURE, vol. xxii. p. 616, it was stated, on the authority of the Japanese papers, that Prof. Atkinson had, "during a sojourn in the Mitake Mountains of the Province of Kosu, discovered another valuable deposit of coal." We are now informed that although Mr. Atkinson visited the Mitake Mountains last summer, he can lay no claim to so important a discovery.

THE Hon. Sir Ashley Eden, K.C.S.I., has appointed Babu Ambika Churn Sen, M.A., and Synd Sakhawat Hossein, B.A., a native of Behar, to the two scholarships of 200*l.* a year each, recently created by the Bengal Government to be held at the Royal Agricultural College, Cirencester.

THE Procureur-General of Paris having sent an explanatory note stating that he did not mean to attack the character of the medical advisers of the public prosecutor, but merely to give vent to his peculiar views, these gentlemen have withdrawn their resignations and resumed their work.

THE Cutlers' Company have arranged for a course of lectures being delivered, or papers read, at the hall of the company during the ensuing winter season. The course will consist of four lectures or papers upon subjects intimately connected with the materials used in the manufacture of cutlery, the lectures to take place on the following dates:—Wednesday, December 1, 1880; Wednesday, January 5, 1881; Wednesday, February 2, 1881; Wednesday, March 2, 1881. Sir Henry Bessemer, C.E., F.R.S., has promised to commence the course, and will, on December 1, read a paper "On the Manufacture and Uses of Steel, with special reference to its employment for Edge Tools." The admission will be entirely free, but by ticket, which may be obtained on application to the hon. secretary, addressed to the Cutlers' Hall.

It is announced that the electric cable manufacturing firm, Berthoud Borel and Co. of Cortaillod, in Neuchâtel, have made a highly important discovery in practical telegraphy. After a long and expensive series of experiments they have succeeded in devising a method of laying cables whereby the inductions of the electric current from one wire to another, although the wires are in juxtaposition, is prevented. This discovery, it is asserted, removes the last obstacle in the way of the widest possible extension of facilities for telephonic communication.

OUR ASTRONOMICAL COLUMN

THE THIRD COMET OF 1869.—This comet, the orbit of which has so close a resemblance to that of the comet discovered by Mr. Swift on October 11, was detected at Marseilles by M. Tempel on November 27, 1869, in the constellation Pegasus, and appears to have been first observed on December 31 at Leipsic and Kremsmunster, the hope of seeing it after the next period of moonlight not having been verified. On November 29 Dr. Vogel, observing at Leipsic, described it as a very faint large object elongated in the direction of the declination circle; in the comet-seeker its diameter was about 6'. On December 7 it was still very faint, large, and elongated in the direction 300°, the central condensation very slight. On the following night its diameter was 5'; it had "a peculiar milky appearance" and hardly any central condensation, so that observations were attended with difficulty. On the 21st it was seen only with much exertion of the eye, but on the 31st, though the comet was very faint, Prof. Bruhns considered his separate comparisons certain to about ten seconds of arc. At Kremsmunster Prof. Strasser found it "extraordinarily faint" during its entire visibility, and in consequence of wanting central condensation, very difficult to observe, and hence considered that his positions would not possess the ordinary degree of accuracy. The elements of the orbit were calculated by Tiele, Oppolzer, Schulhof, and Bruhns, the parabolic orbit published by the latter in No. 1788 of the *Astronomische Nachrichten* being founded upon nearly the whole extent of observation; he remarks with respect to it:—"Eine angestellte Vergleichung hiesigen Beobachtungen schein aber doch auf eine Abweichung der Bahn von der Parabel hinzudeuten . . ." We are not aware that any further examination of this point was made. If the period of revolution be really something less than eleven years, the circumstance of the comet having escaped observation prior to 1869 will not nevertheless occasion surprise, considering that both in 1869 and 1880 it has approached near the earth and has yet been very faint and diffused, so that when the perihelion passage has occurred at other seasons of the year it might be beyond reach of the telescope. It will be most essential for the theory of the comet's motion that observations should be continued as long as possible at the present appearance, that if it prove to be one of short period its next return to perihelion may be closely predicted: the computation of the planetary perturbations during the period 1869–80 will of course be a necessary process with this object in view.

THE STAR LALANDE 1013-4.—Mr. G. Knott has examined this star, to which we lately drew attention, as being credited with the very discordant magnitudes 5, 7.7, and 10. He writes from Cuckfield on November 21: "I looked the star up on November 8 and again on November 19, and found it on each occasion 7.9 mag., and sensibly equal to B.D. + 51°, No. 131, which forms a convenient comparison star. This estimate, it will be seen, agrees nearly with that in the *Durchmusterung*; Harding marks the star 6m.

CHEMICAL NOTES

IN the last number of the *Berichte* of the German Chemical Society Herr v. Lippmann describes experiments which show that a solution of pure cane sugar, when charged with carbon dioxide, is slowly converted into inverted sugar. If the carbon dioxide be pumped into the sugar solution under pressure, the rate of inversion is considerably increased: at 100° the inversion takes place rapidly.

IN the *Annales Chim. et Phys.* the results of M. Raoult's experiments on the freezing points of alcoholic liquids are detailed. An aqueous solution of alcohol containing 1.6 per cent. by volume freezes at -0.5°; a solution containing 47.9 per cent. freezes at -32°. The freezing point of solutions containing from 24 to 51 gram alcohol per 100 gram. water is decreased by 0.528 for each gram of alcohol: when more than 51 gram. alcohol are present to 100 gram. water no regular decrease in the freezing point was observable. The freezing points of various wines are given in the paper referred to.

IN *Comptes rend.* M. Kessler announces that he has prepared a crystallised hydrate of hydrofluosilicic acid, viz., $H_2SiF_6 \cdot 2H_2O$. The hydrate is a hard, colourless, very deliquescent solid, which fumes strongly in air, and melts at about 19°.