Hill. As the hill is approached the veins become larger and finally culminate in this elevation, which is about 300 by 250 feet in diameter at the base. The veinstone of which it is mostly composed rises in prominent and bold croppings. With one or two unimportant exceptions, the material of which this, as well as the other veins, is formed consists wholly of tourmaline and quartz, with which the tin ores are locally associated. The larger veins, and the Cajalco in particular, are very irregular in size, sometimes appearing to be mere bunches in the granite. A few hundred feet northeast of the hill the vein has narrowed to six or eight feet, and it is here that the large body of tin was first discovered and the main shafts sunk. A slide prepared from one of the smaller veins, which in the hand specimen appeared to consist wholly of tourmaline, showed bunches of tourmaline crystals radially arranged and imbedded in interlocking quartz grains.

T. Wayland Vaughan has a paper on the outlying areas of the Comanche Series in Oklahoma and Kansas, in which he describes numerous localities in the region indicated, and supports Mr. Hill's conclusion in regard to the Cretaceous age of the deposits. He concludes that the supposed 'Jurassic' of Marcou "has been proven not only not Jurassic, but that it belongs to Cretaceous beds above his so-called *Neocomian*, which is far above the base of the American Cretaceous."

W. G. Mixter has an extended article on electrosynthesis, or chemical union, affected by means of electricity, but not, as distinguished here, that brought about by the heat of the electrical discharge. The special apparatus employed is described, and the eudiometric observations made with a mixture of hydrogen and oxygen, of carbonic oxide and oxygen, methane and oxygen, ethylene and oxygen, acetylene and oxygen. A comparison is made in several cases between the number of molecules oxidized and those of oxygen consumed, and it is concluded that the same electrical current causes the oxidation of a different number of molecules of the gases, the variation being as one to two, while the oxygen consumed varies as one to seven molecules. In conclusion the author regards the molecular change involved in electrosynthesis "to be analogous to those occurring in synthesis effected by heat or light where combination takes place at a temperature far below that at which the gaseous molecules dissociate." W. Lindgren describes monazite from the gold-bearing gravels near Idaho City, in Idaho, where its occurrence is analogous to that observed at other points, as in the eastern United States, Brazil, the Ural Mountains, etc. It doubtless forms an original constituent of the granite of the Idaho basin.

SOCIETIES AND ACADEMIES.

THE NEW YORK ACADEMY OF SCIENCES.

THE last meeting of the Academy until October took place in the lecture room of the Department of Physics, Columbia University, June 7th. Professor William Hallock described 'A New Method for Projecting Views of the Moon.' A hemisphere about 6 or 8 feet in diameter had been prepared and had been whitened. Using this for a screen, Dr. Hallock projected upon it views of the moon with a powerful arc-light lantern, adjusting the distances so that they just fitted the spherical surface. The natural features of the moon were reproduced with extraordinary vividness and lost all the flattening that is unavoidable with plane surfaces. The only drawback is the lack of sharp focus on the edges of lunar photographs. Adopting a suggestion of Professor Rood, Dr. Hallock had gone off at one side of his spherical screen, while a view of the moon was projected upon it, and had photographed it, thus securing a view of half the lunar surface, as if it had been taken at a point in space at right angles to the line connecting the moon and the earth. It gave a fairly true picture of one quarter of the moon from this point of view. Professor Rood had also suggested the value of projecting photographs of diversified topography of the earth on suitably inclined screens, with the object of reproducing their true relations in space, so as to aid topographic mapping. Such projections when viewed from above would give a bird's-eye view of a landscape in its true relations. Dr. Hallock will communicate a full account of these devices to an early issue of SCIENCE.

Miss F. R. M. Hitchcock next presented a

paper on the atomic weight of tungsten, which will appear in the Transactions of the Academy. The tungstic trioxide was prepared from sodium tungstate and gave no traces of silica, niobic or tantalic oxides, iron or manganese, the alkalies or alkaline earths, or molybdenum. The acid was transformed to ammonium salts. By fractionating these, the following atomic weights were obtained, quantities of from 1.5 to 5 grams being used. The different series had been subjected to a different, previous preparation.

	Series A.	Series B.
1st Fraction	182.34	182.34
2d "	182.77	174.63
3d "	179.92	181.87
4th "	183.45	181.79
4a "		174.87
5th "		177.87
5a "		176.79

Another portion of the trioxide, fractionated by a different method, gave on successive reductions and oxidations of the same portion the following series, in which it will be noted that the weights increase with the oxidations and diminish with the reductions:

	Reduction.	Oxidation.
At. W't.	182.68	184.65
	177.25	185.26
	174.00	191.61

The results of fifty determinations gave atomic weights ranging between 154.064 and 191.61. A series of experiments, that were only briefly referred to, established the fact that in all preparations of WO_3 nitrogen was present, even after repeated reduction. Miss Hitchcock was led to conclude that as regards volatility, metallic tungsten is more volatile than the oxide. Wolframite was found to contain both hydrogen and nitrogen, and scheelite has large quantities of nitrogen.

J. F. Kemp,
Secretary.

ZOOLOGICAL CLUB, UNIVERSITY OF CHICAGO, MEETING MAY 19.—ABSTRACTS OF PAPERS PRESENTED.—ORIGIN OF THE PRONEPHRIC DUCT IN SELACHIANS.

There have been different opinions as to the origin of the Pronephric Duct in Selachians. Acanthias embryos were used in making a renewed study of the subject. The Anlage of the Pronephros consists of segmental outgrowths of the somatic layer of the somites from the seventh to the twelfth segments. These are connected with the ectoderm at their outer edge. This fusion early disappears. The tip of the distally growing duct was constantly fused with the ectoderm. One case of Karyokinesis between ectoderm and duct was found. Growth also takes place throughout the length of the duct. Frontal sections showed six Pronephric tubules on the right side with aortic diverticula between. Connected with the aorta there were also found structures which may be interpreted as glomi.

From the facts here given we conclude that the earliest Anlage of the Pronephros fuses temporarily with the ectoderm and may possibly receive some few cells from it. The first part of the duct proper seems to share to some slight degree in the mesodermal origin of the anterior region. So far as the duct develops distally the connection of its tip with the ectoderm is maintained. This fusion would be sufficient evidence of a genetic relation for those who accept the principle of the teloblastic growth of organs. On the appearance of the paper by Rabl the preparations were again examined carefully, but without finding any grounds for abandoning the view that there is a genetic connection between the duct and the ectoderm in Selachians.

Emily Ray Gregory.

Dr. Whitman followed with a paper on 'The Development of the Wing-bars in Pigeons.'

NEW BOOKS.

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On the Origin of the European Fauna. R. F. Scharff. Dublin University Press. 1897. Pp. 427–514.

Some Observations of a Foster Parent. John Charles Tarver. Westminster, Archibald Constable & Co., 1897; New York, The Macmillan Co., 1897. Pp. x + 282. $1.75.

Electro-métallurgie. Ad Minet. Paris, Gauthier-Villars et fils. 1897. Pp. 195.