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.*

*Catalogus Mammalium tam viventium quam fossilium.* E. L. Trouessart. Fasciculus II. Carnivora, Pinnepedia Rodentia 1. Berlin, R. Friedländer & Sohn. 1897. Pp. 219–452. M. 10.

*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.