

Up to the present time, no compounds of chromium with ammonia have been described, which are analogous in composition to those forming the subject of this paper. The metal cobalt, however, forms with ammonia the base of Frémy's well-known series of luteocobaltic salts, to which these compounds bear a marked resemblance. Comparing the compounds at present analysed with the corresponding luteocobaltic salts:—

New Series.		Luteocobaltic Salts.
$\{(\text{CON}_2\text{H}_4)_{13}\text{Cr}_2\}(\text{Cr}_2\text{O}_7)_3\cdot 3\text{H}_2\text{O}$	....	$\{(\text{NH}_3)_{12}\text{Co}_2\}(\text{Cr}_2\text{O}_7)_3\cdot 5\text{H}_2\text{O}$
$\{(\text{CON}_2\text{H}_4)_{12}\text{Cr}_2\}(\text{PtCl}_6)_3\cdot 2\text{H}_2\text{O}$	....	$\{(\text{NH}_3)_{12}\text{Co}_2\}(\text{PtCl}_6)_3\cdot 6\text{H}_2\text{O}$
$\{(\text{CON}_2\text{H}_4)_{13}\text{Cr}_2\}\text{Cl}_6\cdot 6\text{H}_2\text{O}$	....	$\{(\text{NH}_3)_{12}\text{Co}_2\}\text{Cl}_6$
$\{(\text{CON}_2\text{H}_4)_{12}\text{Cr}_2\}(\text{SO}_4)_3\cdot 10\text{H}_2\text{O}$	....	$\{(\text{NH}_3)_{12}\text{Co}_2\}(\text{SO}_4)_3\cdot 5\text{H}_2\text{O}$
$\{(\text{CON}_2\text{H}_4)_{12}\text{Cr}_2\}(\text{NO}_3)_6$	....	$\{(\text{NH}_3)_{12}\text{Co}_2\}(\text{NO}_3)_6$

Several other compounds are in course of preparation or analysis, and will form the subject of a further communication.

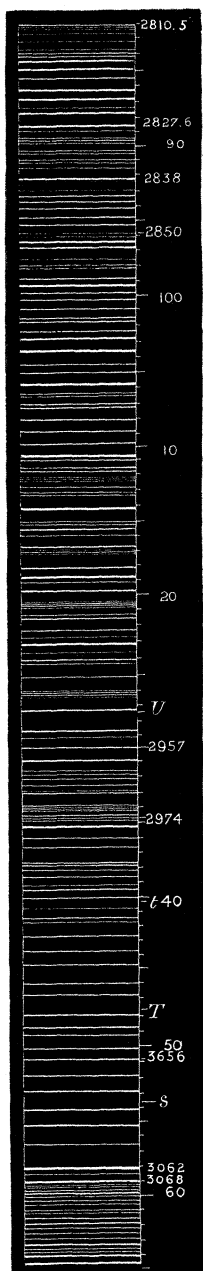
I am greatly indebted to my friend and former pupil, Mr. C. T. Heycock, B.A., for much valuable aid in the analysis of these complicated compounds.

I desire also to express my thanks to Professor Liveing for much valuable advice and assistance.

II. "On the Spectrum of Water. No. II." By G. D. LIVEING, M.A., F.R.S., Professor of Chemistry, and J. DEWAR, M.A., F.R.S., Jacksonian Professor, University of Cambridge.  
Received January 14, 1882.

In our former communication on the subject of the water spectrum ("Proc. Roy. Soc.," vol. 30, p. 580) we stated that the spectrum we then figured did not by any means exhaust the spectra of flames we had observed, but it was as much as we had at that time been able to trace to water as its cause. We had, in fact, noticed in the spectrum of coal-gas and hydrogen-flames a still more refrangible but less intense series of lines; and we have since observed that this second series is produced under the same circumstances as the first, and we therefore ascribe it to the same cause, namely, the incandescent vapour of water. It is easily produced not only by the flames just mentioned, but by the arc of a De Meritens machine when a current of steam is passed into it, and by the spark of an induction coil without jar in moist air or other moist gas. When a large coil and jar are used it almost or wholly disappears.

The accompanying figure is drawn from a photograph of the spectrum of an oxyhydrogen flame; and the wave-lengths marked on



it were derived by interpolation from the wave-lengths of the magnesium and iron lines. The arc of a De Meritens machine taken in a crucible of magnesia gave us, when a current of steam was passed into the crucible, both the water spectrum and the metallic lines on the same plate. The solar lines are marked in the figure in positions held by the corresponding iron lines. These photographs were taken with prisms of Iceland spar. None of our photographs show any more refrangible rays produced by water within the limit of transparency of Iceland spar, *i.e.*, below a wave-length of about 2200.

- III. "An Attempt at a Complete Osteology of *Hypsilophodon Foxii*, a British Wealden Dinosaur." By J. W. HULKE, F.R.S. Received January 16, 1882.

(Abstract.)

The author, after giving a list of papers on remains of this Dinosaur, by Professor Owen, Professor Huxley, and himself, and noticing the great want of a complete osteology which might serve as a type, describes in detail the skull, including the dentition, the vertebral column, shoulder-girdle, and hip-girdle with the limbs, and compares their structure with that of other fossil and extant Sauropsida. He maintains the generic distinctness of *Hypsilophodon* from *Iguanodon* as typified by *I. Mantelli*, considering that the very different structure of their hind feet is decisive of this. The paper embodies the results of dissections of parts of several skeletons, and it is illustrated by figures of all the bones described.

- IV. "The Influence of Stress and Strain on the Action of Physical Forces." By HERBERT TOMLINSON, B.A. Communicated by Professor W. GRYLLS ADAMS, M.A., F.R.S. Received January 18, 1882.

(Abstract.)

#### PART II.—*Electrical Conductivity.*

The temporary alteration of electrical conductivity which can be produced by longitudinal traction was measured for all the metal wires used in Part I, both in the hard-drawn and annealed condition, and, in addition, for carbon and nickel, by the following method:—The wires were suspended in pairs of equal lengths in an air-chamber 4 feet in length and 4 inches inner diameter. This vessel, which consisted of two concentric cylinders containing a layer of water

2810.5

2827.6

90

2838

2850

100

10

20

*U*

2957

2974

*t*40

*T*

50

3656

*S*

3062

3068

60