

7. By heating nitronaphthalenesulphochloride (obtained from β -naphthalenesulpho acid) with excess of phosphoric chloride; colorless needles; m. pt., 48°.

The only one of these which resembles in characters the one formed from the naphthalene tetrachloride, in sealed tubes, is the δ modification, but its melting point, as will be seen, is considerably lower. For these reasons, the modification described must be regarded as new, and to it, which is the eighth now known, we shall accordingly give the name ϑ -dichlornaphthalene.

XXV.—ON THE PROBABLE OCCURRENCE OF NORWEGIUM IN AMERICAN LEAD.

BY GEO. A. PROCHAZKA.

C. W. Blomstrand reports (Ber. d. d. chem. Gesell., 12, 1731) on the discovery of norwegium by Tellef Dahll, substantially as follows:

“On a small island, Oterö, in the neighborhood of Kragerö, where Mr. Dahll resides as mining director, towards the end of the year 1878, a calcite gangue, interspersed with small particles of copper, nickel and nickel glance, was discovered. The nickel glance, on analysis, gave nickel, cobalt, iron, arsenic and sulphur. The hydrogen sulphide precipitate was treated with ammonium sulphide to remove the arsenic; the black sulphide of a new metal remained undissolved. 10 kgrms of the ore were then roasted; the residue was dissolved in acid and precipitated by H₂S. The precipitate was dried and again roasted; the oxide thus produced was reduced to metal.

Further investigation proved that the metal contained copper. To remove the copper the metals were converted into chlorides, and the solution diluted with a large excess of water. The new metal was thereby precipitated as oxichloride, while copper remained in solution. The new metal in its properties bears very close resemblance to bismuth.

	Bismuth.	Norwegium.
Melting Point.....	264°	254°
Atomic Weight (R ₂ O ₃).....	210	218.9
Sp. Gravity.....	9.8	9.441

The oxides of both metals are fusible, and give in the flame, on porcelain, a metallic mirror. The main difference between the two metals consists in the solubility of the oxihydrate of the new metal in caustic alkali, as well as in ammonium and sodium carbonate solution, on boiling. The difference is well marked if carbonates are treated in the same manner.

In the course of an examination of American refined lead, containing comparatively large quantities of copper and nickel, the bismuth had been precipitated in the ordinary manner by an excess of sodium carbonate, from the potassium cyanide solution of the 5th group of metals (Fresenius). In the alkaline filtrate, H_2S produced a reddish-brown precipitate, which could not be identified as the sulphide of any of the well known heavy metals. It was readily soluble in dilute nitric acid. From this solution a basic salt was precipitated by water. Potassium carbonate produces a precipitate which is soluble in an excess of the boiling precipitant. Hydrogen sulphide precipitates the original sulphide from the alkaline solution.

The quantity of sulphide was very small, amounting to about 1 mgrm from 200 grms of lead.

The reactions, as far as they could be verified, considering the smallness of the quantity of material, correspond to the description of norwegium as given by Dahill.

The refined lead was a mixture of leads from various sources, but it is not improbable that there may be a connection between the presence of copper, nickel and norwegium. Proper attention given to the various lead ores, especially those which yield lead containing larger quantities of copper and nickel, will undoubtedly throw further light upon this subject.

The results obtained seemed of sufficient interest for publication for the benefit of those who may be more favorably situated, both with regard to time and material, than I am at present.

XXVI.—ON CHICKEN CHOLERA: STUDY OF THE CONDITIONS OF NON-RECIDIVATION AND OF SOME OTHER CHARACTERISTICS OF THIS DISEASE.

BY M. L. PASTEUR.*

Translated from the *Comptes Rendus de l'Academie des Sciences*, of April 26th 1880, page 952, by P. Casamajor.

In the communication which I had the honor of presenting to the Academy in the month of February last, I announced, among other results, that chicken cholera originates in a microscopical parasite; that there is an attenuated virus of this disease, and that one or more inoculations of this attenuated virus may preserve chickens from death when inoculated with the virus of maximum virulence. On account of the striking similarity that these two forms of virus present with the effects of variola and vaccine in man, it becomes in-

* The translation of the first paper of this series appeared in this JOURNAL, February, 1880 (2, 79).