Directors:

P. Casamajor,
C. F. Chandler,
W. H. Nichols,
H. Endemann,
James H. Stebbins, Jr.,
M. Alsberg,
W. M. Habirshaw,
A. R. Gallatin,
H. Morton,
E. R. Squibb,
Elwyn Waller,
Geo. Prochazka,
A. R. Leeds.

As the Chairman was obliged to depart before the close of meeting, Mr. Casamajor was elected Chairman *pro tem.*

The meeting was then adjourned.

JAMES H. STEBBINS, Jr.,
Recording Secretary.

XXVIII.—On Some New Salts of Alpha Thymole Sulpho-acid, and Some New Facts Concerning the Same.

(Second Paper.)

By James H. Stebbins, Jr.

In my last paper I described the calcium and ammonium salts of alpha thymole sulpho-acid. In this paper I will describe the sodium salt and free sulpho acid, which I mentioned in connection with my first paper.

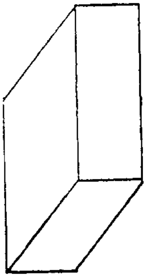
Soda salt of alpha thymole sulpho-acid,

$$C_6H_2(CH_3)(C_3H_7)(NaSO_3)ONa + 2\frac{1}{2}H_2O.$$

A part of the lime salt was dissolved in boiling water and decomposed with Na_2CO_3.

The $CaCO_3$ thus formed was then filtered off, and the clear filtrate concentrated over the steam bath to the consistency of a syrup. On cooling, the soda salt crystallized in fine white, rhombic plates, with strong vitreous lustre. These crystals show the planes, a: ∞c: ∞b, or macropinacoids; and ∞c : b : ∞ a, or macrodomes.

The crystalline form may be seen from the following diagram:



This compound is easily soluble in water and alcohol; melting point, 166 to 167° C. At 100° C., it parts with all its water of crystallization, and crumbles into a fine white powder, in the same manner as the other salts described.

Alpha thymole sulpho-acid:

$$C_6H_2(CH_3)(C_3H_7)(HSO_3)OH + H_2O.$$

It was first tried to obtain this body by decomposing the lime salt with CO_2; however, this failed completely, as even a prolonged passing of CO_2 through a concentrated solution of the lime salt failed to produce the slightest precipitate of carbonate of lime. Therefore, this was abandoned, and the lead salt was resorted to, as the best means of accomplishing this end. 60 grms. of thymole were dissolved in 50 grms. of H_2SO_4, and heated on the steam bath till the contents of the dish became nearly one crystallized mass. The colorless fluid * remaining was poured off, and the pink crystalline body dissolved in boiling water, and was then neutralized with carbonate of lead. The lead sulphate formed was filtered off, and a current of H_2S was then passed through the clear filtrate, till all the lead (in combination with thymole sulpho-acid) had been precipitated as black sulphide of lead. This was then collected on a filter, and the filtrate evaporated to the consistency of a syrup. When cold, the free sulpho acid crystallized in beautiful, large white rhombic scales, with pearly lustre and greasy feel.

It dissolves very readily in hot and cold water; melting point, 91 to 92° C.

This body, in crystallizing, retains a certain amount of water, with which it parts, however, if placed for a few days over sulphuric acid.

A water estimation of substance dried over sulphuric acid gave: 1.052 grm. substance lost 0.15 grm. of water, or equivalent to very nearly one molecule.

Heated on platinum foil, the salt first melts and then burns with sooty red flame, leaving a voluminous black carbon residue behind.

A carbon and hydrogen estimation of the above gave:

	THEORY.	
C_{10}	120	52.17 per cent..
H_{14}	14	6.08 "
S	32	13.91 "
O_4	64	27.84 "
	230	100.00

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* This fluid is the same as mentioned in my first, as a by-product in the preparation of alpha thymole sulpho-acid.

FOUND.

Carbon	52.19 per cent.
Hydrogen	6.10 "

BY-PRODUCT.

The by-product heretofore described was dissolved in boiling water, and neutralized with $PbCO_3$.

The precipitate of $PbSO_4$ was collected on a filter, and the clear filtrate treated with a current of H_2S, till all the lead had been thrown down as PbS. This was collected on a filter, and the filtrate evaporated to the consistency of a syrup. It was then placed over sulphuric acid and allowed to crystallize. The compound so obtained crystallizes in long, white needles, which bear a striking resemblance to the disulpho acid of alpha thymole. They are very easily soluble in water, and are likewise quite hygroscopic.

Owing to the small amount of substance under examination, a combustion was out of question, but to judge from the appearance of this body, I should immediately call it alpha thymole disulpho-acid

XXIX.—On the Combination of Diazo Compounds with Alpha Thymole Sulpho-acid.

By James H. Stebbins, Jr.

In my last paper I hinted at the possibility of combining diazo compounds with alpha thymole sulpho-acid, and I will take the liberty, on this occasion, of describing my experiments in this direction.

Azobenzole alpha thymole sulpho-acid,

$$C_6H_4 - N = N - C_6H(CH_3)(C_3H_7)(HSO_3)OH.$$

9.3 grms. aniline were dissolved in 22 grms. of strong HCl, diluted with 200 c.c. of water. To this mixture was then added, under constant stirring, 7 grms. of $NaNO_2$, previously dissolved in 50 c.c. of water.

The diazobenzole chloride thus formed was added gradually to an alkaline solution of the soda salt of alpha thymole sulpho-acid, consisting of 23.6 grms. of the sulpho acid and 8 grms. of KOH, previously dissolved in 200 c.c. of water. A copious yellow precipitate, composed of minute hair-fine needles, is thus formed, and constitutes the soda salt of our new dye-stuff.

This was then dissolved in boiling water and filtered from a black tarry fluid which was formed during the dissolving process. This