

We then had recourse to Marsh's apparatus, and as the scum prevented a continuous flow of the gas, we allowed it to accumulate in the short branch of the tube, and opened the cock only when the froth had disappeared. This was expedited by moving a piece of ignited coal round the tube, bent at right angles about three inches above the cock to which it was adapted. This tube was heated to redness in the middle of its horizontal part.\* A quantity of arsenic, quite considerable, was here deposited; and the extremities of the tube being sealed by a lamp, the specimen was easily preserved. This last method of decomposing arsenical hydrogen is unquestionably the best, for no portion of the gas is lost, and by continuing the operation, we obtain within a short space almost the whole of the arsenic contained in the substance to be analysed; and if we are careful as soon as the operation is over, to close the end of the tube, the arsenic preserves indefinitely its metallic brilliancy when exposed to the air.

We were given also some fecal matters to examine, which we had only to boil for a few moments in distilled water, to obtain, by the above process, results which were very satisfactory.

I ought to mention, that we rigorously examined the purity of the sulphuric acid and the zinc employed in the investigation, and after each operation we changed the zinc, lest some arsenic might be deposited on it.

My only object in this note is to recommend the process of Marsh as the most eligible for its simplicity, ease, and the certainty of its results. Our application of it is the first, I believe, in so grave a case of medical jurisprudence.

D\*\*\* was found guilty of poisoning his wife, and condemned to death on the 23d of August last, by the court of session of Seine and Marne.

Journ. de Pharmacie, Oct. 1838.

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*New Cyanuret of Iron.* By M. PELOUZE.

This is obtained by passing an excess of chlorine through a solution of cyanoferriate of potassium, allowing the liquid to repose, or, which is better, to heat it to ebullition. A light, green, insipid powder is deposited, mixed with oxide of iron and Prussian blue. Treated with eight or ten times its weight of boiling hydrochloric acid, which destroys the Prussian blue, and dissolves the oxide of iron,—washed and dried in a vacuum, it constitutes the new cyanuret.

Idem. Nov. 1838.

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*Analysis of Several Bituminous Minerals.* By M. P. BERTHIER.

As bituminous substances have of late years claimed an increased share of public attention, this celebrated analytical chemist has examined the constitution of a number of those which have gained the most notice on account of their practical applications.

*Bitumen of Seyssel.* There are at Seyssel, (in the department of L'Ain) three kinds of minerals,—1. The sandy mineral. 2. The very fusible calcareous mineral. 3. The calcareous mineral of difficult fusion.

The *first* of these melts in boiling water, and becomes detached from the stony matters to which it was adherent. It rises to the surface, or sticks

\* Journ. Frank. Inst. vol. xviii., p. 338.

† Id. vol. xxii., p. 333.

to the sides of the vessel in brown lumps, or forms a transparent coating of a brownish red colour. A rich specimen of it gave

Bituminous oil	. . . . .	.086	} bitumen .106
Carbon	. . . . .	.020	
Quartz grains	. . . . .	.690	
Calcareous grains	. . . . .	.204	
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In the mass it is much less rich. When purified by hot water, this bitumen is called *la graisse*, grease.

The *second* variety is called at Seyssel *asphaltum*. It may be pulverized and sifted, but the powder spontaneously forms into balls. The specimen analysed contained .11 of bitumen, 5.89 of carbonate of lime, without clay, and quite pure.

The *mastic* of Seyssel is prepared by mixing nine parts of *asphaltum* with one of the pure *grease* extracted from the sand.

The *third* variety is a compact limestone, in extremely thin, parallel beds.

It consists of

Bituminous matter,	. . . . .	.100
Argil,	. . . . .	.020
Sulphate of lime,	. . . . .	.012
Carbonate of lime,	. . . . .	.868
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The bituminous mineral of *Belley* is very similar to the preceding. It is found in several communes in very considerable quantities, near the surface of the ground. It is of variable quality. A variable specimen yielded

Carb. of lime,	. . . . .	.824
Carb. of magnesia,	. . . . .	.020
Sulphate of lime	. . . . .	.013
Argil,	. . . . .	.023
Bitumen,	. . . . .	.120
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*Bitumen of Bastennes.* This bitumen flows out from several openings or springs, mixed with water. Analysis of the solid gave

Oily matter,	. . . . .	.200	} bitumen
Carbon,	. . . . .	.037	
Fine quartz sand, mixed with argil,	. . . . .	.763	
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*Bitumen of Cuba.* This is transported to Europe under the name of *Mexican asphalt*, or *chapotote*. It is a solid bitumen, which exists in abundance near Havana. It may be used with great advantage in paving. It consists, like the greater number of natural bitumens, of at least two different substances, the one soluble and the other insoluble in ether and spirits of tur-

pentine. It is the relative proportion of these two substances which imparts to each bitumen its peculiar properties.

*Bitumen of Monastier* (Haute-Loire.) This does not soften in the least in boiling water, and hence cannot be extracted by simple means in the large way. It contains.

Bituminous oil,	. . . . .	.070	} .105
Carbon,	. . . . .	.035	
Water,	. . . . .	.045	
Gas and vapours,	. . . . .	.040	
Quartz and Mica,	. . . . .	.600	
Ferruginous argil,	. . . . .	.210	
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This bitumen of the Haute-Loire differs essentially from those of Seyssel and Bastennes by its infusibility in boiling water, and its fusibility in alcohol.

Annales des Mines, tom 13, liv. iii.

#### *On the Red Colour of Salt Marshes.* By M. PAYEN.

When sea water is subjected to spontaneous evaporation, the commencement of the deposition of salt is known by the appearance of a light red scum. A reddish tint is observable also in the salt when collected in heaps, and it then emits an odour somewhat like violets. This colouring is occasioned by little crustaceous insects of the order of branchiopodes, and genus *Artemia*. These little animals, about a third of an inch long, have the form of a very thin cylindrical or vermicular tube, furnished with two little antennæ and two round and elevated black eyes, with a narrow mouth under the eyes. They have 22 swimming legs, which take up half their length. They move with prodigious rapidity, but perish when the solution acquires the density of 25°. Their bodies then become red, and float over the surface in the form of a scum.

Idem.

#### *Copper in Cuba.* By P. BERTHIER.

A French merchant has just brought from Cuba specimens of a metallic substance which may be obtained, as it appears, in very great quantities. I have found it to consist of melted sulphuret of copper, absolutely pure. Though it contains neither gold nor silver, it would be an excellent object of commerce, because it would be extremely easy to extract from it the 80 per cent. of copper which it contains.

Idem.

#### *Analysis of two Micæ, with Bases of Potash and Lithim.* By V. REG-

NAULT.

These micæ swell easily at a red heat, without any sensible loss of weight, and are then easily pulverized.

*Lepidolite rose Mica.* This mica is presented under the form of very small rose coloured spangles. It is found disseminated in a keolin used in the porcelain works of Vienna, in Austria. It is separated in the levigations which the clay undergoes.