

A NEW CONDENSER ATTACHMENT.

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The condenser attachment consists of a bulb shaped cylinder about $2\frac{1}{2}$ inches in diameter, and 4 inches in length (exclusive of lower contracted portion to fit into the stopper of the percolator, containing the extraction tube), into the neck of which a tube (1 inch in diameter), containing a syphon, is attached by fusion. The tube reaches well down into the cylinder, and is perforated above the height of the syphon, to admit the vapors into the condenser. The inner end of the syphon reaches very near to the bottom of the tube, and thus will thoroughly drain the same. The condenser attachment, made for me by Eimer & Amend, delivers about 15 c.c. of solvent at each syphoning, which is the most suitable quantity for ordinary work. Any desired quantity of solvent can be delivered by increasing the size of the reception tube, or raising the height of the syphon, in which case the size of the extraction tube must also be increased, to hold the increased quantity of solvent. The solvent drops from the condenser into the bulb shaped attachment and is discharged periodically by the automatic syphon upon the substance contained in the extraction tube below. The condenser attachment is of special advantage in the extraction of crude drugs, fats, alkaloids, resins, or substances to be removed by volatile solvents, such as ether, petroleum ether, chloroform, etc. One objection to the ordinary extraction tube and percolator with condenser is, that the time of extraction is unnecessarily prolonged by the continual dilution of the solvent in the extraction tube by the condensed portions from the condenser, before that already in the extraction tube has had time to drain off. The difficulty is obviated by the condenser attachment, for little of the condensed solvent will get into the extraction tube proper until the reception tube is filled to the bend in the syphon, when the tube empties itself. By a little care this can so be regulated that the solvent in the extraction tube is drained off before a fresh

supply is syphoned into the same from the tube above. By keeping sufficient solvent in the lower flask or receiver, there is no danger whatever of the material in the extraction tube becoming overheated and ejecting the solvent, when the latter is delivered upon the same. The inner tube of the Liebig condenser, used with this piece of apparatus, should have an internal diameter of $\frac{5}{16}$, or better, $\frac{3}{8}$ inch, and the lower end should be cut off obliquely. The following are the sizes of the different parts of the complete extraction apparatus, convenient and suitable for the needs of ordinary work :

1. A 6 oz. Erlenmeyer flask.
2. Extraction tube, $1\frac{1}{8}$ inches (inter. diameter) \times 5 inches length.
3. Percolator, $1\frac{1}{2}$ inches internal diameter, \times 7 inches for body of cylinder, exclusive of lower contracted end of about $2\frac{1}{2}$ inches. Total length of percolator, $9\frac{1}{2}$ inches.
4. Condenser attachment, size to deliver about 15 c.c. solvent.
5. Liebig condenser, about 15–16 inches in total length, with inner tube of $\frac{5}{16}$ to $\frac{3}{8}$ inch internal diameter, and lower end cut off obliquely.

ABSTRACTS.

ANALYTICAL CHEMISTRY.

Analysis of German Silver. FELIX OETTEL.

This alloy of Cu, Ni and Zn, with occasionally Sn, Pb, Fe, Co, and Mn, is most readily analyzed as follows :

Dissolve the alloy in nitric acid and evaporate the solution, previously filtering if tin be present, and adding 15 to 20 drops of sulphuric acid for each .5 grm. metal taken. Separate the lead as sulphate if present. The filtrate, free from Sn and Pb, is diluted to 100 c.c., 2 c.c. of conc. hydrochloric acid are added, and the solution is treated with H_2S gas. On completion of the precipitate, indicated by the rapid settling of the CuS , heat to boiling, cool and filter. Wash the precipitate with dilute hydrochloric acid containing H_2S , and