V.—*On a new Combustion Blowpipe for Organic Analysis.*

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FOR many years I have been in the habit of using a blowpipe in organic analysis, which I think will render much more easy and prompt the combustions required to determine the ultimate constitution of vegetable and animal matters. It is founded upon the principle of my gas blowpipe, now so common in laboratories and workshops; this principle has also, since my protection, been

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adopted in the construction of Griffin's and Gore's chemical furnaces.

A is the gas service-pipe attached to the laboratory table.

B is the mouthpiece and elastic tube through which the air or breath is driven to mix with the gas before combustion.

C is the burner, formed of a piece of gas service-tube, bent back upon itself once or twice, about $\frac{1}{4}$ of an inch apart, and having a series of fine holes made in each length, pointing inward.

D, two brackets to support the burner.

E, two pillars of tube with adjusting screws to bear the combustion tube by the wire hooks F.

The use of this burner is very simple. The combustion-tube being filled and arranged, the gas is turned on slightly, but a sheet of thin iron interposed prevents the flame from acting on any part of the tube but that nearest its exit. When it has been gradually heated, a moderate stream of air is sent from the lungs through the gas until that part of the tube is fully red-hot, the iron plate is now slowly drawn backwards until the whole of the tube and contents shall have been made fully red-hot and the combustion completed; then, by moderating the blast and reducing the flow of gas, the tube gradually recovers its original temperature—at first carbon is deposited, but as soon as the blast is sent in, the deposit is burnt off by the non-luminous flame, and the tube becomes fully red—the whole operation not occupying more than ten minutes or a quarter of an hour.