

pendulous Hair, proceeding from the lower Ridge of the Nose: Under this Hair the Cavity is dark: Below the Nose the Lip-shades shew the more deprest places: Under this Lip are visible four Forcipes to lay hold on its Food, two of each side, as in the Figure.

*See the Figures, the largest of which is drawn with the help of a Microscope.*

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IX. *An extract of a Letter from Dr. Robert St. Clair, to Dr. Rob. Hook, F. R. S. giving an Account of a very odd Eruption of Fire out of a Spot in the Earth near Fierenzola in Italy, with an easy Contrivance of a Lamp to be kept always full whilst it burns.*

S I R,

HAVING lately had an Observation communicated to me by my Brother, which he made when he travelled through *Italy* last, differing from any I have hitherto met with in Natural Histories, I presume you may think it not unfit to be communicated to the Publick, and so give it a Place in the next *Philosophical Transactions*. It is this: On a side of one of the *Appenine* Mountains half way betwixt *Bologna* and *Florence*, near a Place called *Petra Mala*, about Five Miles from *Fierenzola*, there is a Spot of Ground about three or four Miles diameter, which incessantly sends up a Flame rising very high, without Noise, Smoke or Smell; yet it gives a very great Heat, and it has been observed to be thus in all times, except of great Rains, which put it out for a time; but when that is over it burns with greater Vigour and Heat than before: the Sand about it, when  
turn'd

turn'd up, sends up a Flame; but within three or four Yards of it there grows Corn all round about; for it continues always in the same Spot. This Flame seems to proceed from a Vein of Bitumen or *Naphtha* that *cropes* (as the Miners call it) only here; which, when by plowing, or some other Accident, the upper Crust has been turn'd up, was kindled into a Flame by the Heat and Agitation of the Air, as other *Salino-Sulphureous* Bodies are, of which Esquire *Boyl's Phosphorus* is a particular Instance, the like spontaneous Accension is seen in many mineral Substances, but none that I know of, so quick in its production or lasting, as this is, the whole Woods and Fields have been destroyed by them. The Neighbours there have been so little curious to observe it, that they believed that there was a great Hole in the Flame-place; but he found it to be firm Ground. Neither does any there remember when, and upon what Occasion it first began. The flaming Well near *Wigan* seems to proceed from a Cause much like this, in which you may boyl an Egg, and upon the approaching of a lighted Candle it takes Fire, both seem to proceed from a *Naphtha* or subtle *Bitumen*, only that in a hotter Country, and being in a dryer Soyl, is more Subtle and inflammable; just as the *Petroleum* which is found in *Italy* is a white-like Spirit of Turpentine; and is more penetrating than the *Petroleum* which is to be found in the Northern Countries; an Instance of which we have in a Well two Miles distant from *Edinburgh*, called the *Baulme-Well*, of a black red colour, and very thick, but being distill'd, does in Colour, Taste and Smell, resemble that of *Italy*. What *Lonicerus* says of the *Naphtha* is not improper for this Place, *viz.* that 'tis of two sorts, *Candida* & *Nigra*, *Candida præfertur; generatur ex bitumine à seipso in terrâ & montibus accenso, tenuissimis ejus vaporibus sursum elatis, & ad frigidora saxa in tenuem li-*

*quorem resolutis, quæ per suos meatus è montibus fontium instar scaturit, ac inde oleum petræ dictum est, quod videlicet ex petris profluat.* This spontaneous Accension of the *Naphtha* seems to be made out by the Smell that our *Bitumen* near *Edenburgh* yields, being most like Coal-Smoak. There are three such Fires on the same Hills that are extinguisht in the Summer, but burn in the Winter. The Reason of which I judge to be, that the Bowels of the Earth being cooler in Summer than in Winter, do not send forth that Quantity of those subtile Exhalations as may be sufficient to maintain a Flame in Summer; but in Winter, the Bowels of the Earth being hotter (which is made evident by the smoaking of Springs in Winter, and not in Summer, and the Experience of Miners) greater Plenty of Steams are sent forth, which in the Air are agitated into a Flame, the brisk of the Parts one against another, being promoted by the subtilty and brisk Motion of the Aerial Particles, *quæ mutuas dant operas.*

*An easy Contrivance of a Lamp to be kept always full whilst it burns.*

S I R,

**M**Y writing of this Accension of combustible Matter by the Air, puts me in mind of your Observation about the Action of Flame, upon the Wyck of a Lamp or Candle, which it never wastes till the Wyck be expos'd to the Air by the Flames falling downwards, from which you infer, that a way found out to keep the Fuel, and consequently the Flame at the same height upon the Wyck, would make it serve a long time; for which effecting, you have a great many pretty Contrivances. I have, a good while ago, thought the same might

might be effected by Hydrostaticks; which when I first communicated, was approved of; and I am thereby induced to think it will not be unacceptable to the Publick. It is this; Let a Lamp be made Two or Three Inches deep, with a Pipe coming from the bottom, almost as high as the top of the Vessel, be fill'd first with Water, so high as to cover the Hole of the Pipe at the bottom, to the end the Oyl may not get in at the Pipe (and so be lost): then let the Oyl be pour'd in so as to fill the Vessel almost brim full, which must have a Cover pierct with as many Holes as are design'd to be Wycks. When the Vessel is thus fill'd, and the Wycks are lighted, if Water fall in by Drops at the Pipe, it will keep the Oyl always at the same height, or very near, (the Weight of Water to that of Oyl being, according to *Kircher's* Table, as  $20\frac{8}{11}$  to 19, which in two or three Inches will make no considerable difference.) If the Water runs faster than the Oyl wastes, it will only run over at the Top of the Pipe, what does not run over, will come under the Oyl, and keep it to the same height.