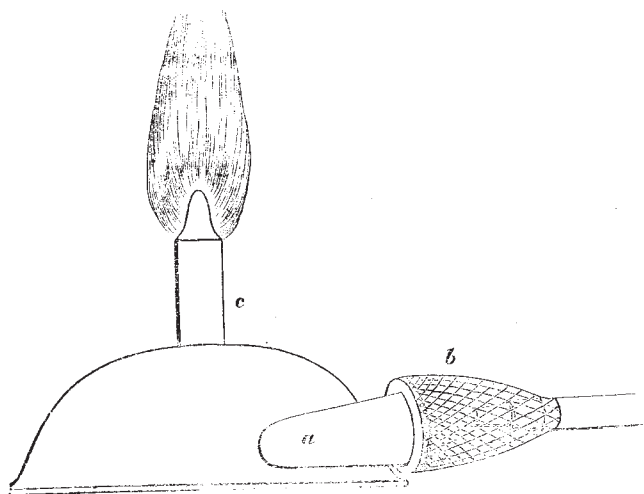


Edinburgh, in whose laboratory Mr. Wright practised with them, of the first use of smokeless coal-gas flames in acoustical experiments as not long anterior to the date named by Mr. Wright as that of his practical experience of their use. But it must be borne in mind that of all highly inflammable and intensely heating gases next to hydrogen, the most easily procurable since the general extension of the use of coal-gas, is an explosive mixture of the latter gas with air; and the experiments of Sir H. Davy, in 1816, having demonstrated that such a mixture may be prepared safely underneath wire-gauze and may be safely burned above it, the use of the wire-gauze flame for laboratory heating purposes, and also to illustrate very suitably the chemical harmonicon, must have been a very early suggestion. Its unwieldy size and stentorian proportions for the latter purpose, however, have not impossibly led to its comparative abandonment and



J. WALLACE'S TABLE BUNSEN-BURNER.

*a.*—Conical and spiral mixing-tube coiled inside the foot, terminating at the centre in a small chamber closed with wire-gauze at the top, at the foot of the flame-tube. *b.*—Conical wire-gauze cap, strengthened by three wires to support the gas-tube, to protect the gas from ignition, to keep off draughts, and to distribute the current of air to the gas (junctions all soldered). *c.*—Short flame-tube, closed at the bottom with wire-gauze to prevent the flame from flashing back when the gas is turned on or off. Whole height about 2½ in. Height of flame, 1¼ in. or 2 in. Height of central bright flame, exactly ½ in.

disappearance from the scene of modern laboratory experiments, and to its general replacement, in coal-gas illustrations of the chemical harmonicon, by various modifications with different forms of jets, of the much more portable, convenient, and easily adaptable Bunsen-burner. Thus a long-recognised and important application of gauze-topped gas-burners in the student's scientific practice might have fallen into oblivion, or into disuse and comparative neglect, if contemporaneous experiments like those of Irvine, Barry, Govi, Geyer, Rijke, and it may safely be prophesied of many other active fellow-workers in the same field of discovery and research, did not revive the discussion, and continue to develop the observation of these flames with multiplied results that appear to be in perfect accordance with the principles, and to furnish the most beautifully effective illustrations possible of important properties of effluent gas-currents, which would perhaps otherwise escape detection. The laws of the flow of escaping gas-jets, their powers of producing ventilation and exhaustion, and, on the other hand, the means of providing for their escape with as little waste of their energy as possible, are questions of practical importance in so many useful industrial applications, that they amply deserve the increased measure of scientific attention which the beautiful succession of modern discoveries of sensitive and sounding flames has been very materially instrumental in attracting, and appears still further to be eminently capable of directing towards them.

Newcastle-on-Tyne, Oct. 19

A. S. HERSCHEL

#### Insects and Colour in Flowers

IN his second letter (*NATURE*, vol. xi. p. 28) Mr. Mott passes to the discussion of the general question whether beauty is an "object in nature." On that point my feeling is that our know-

ledge is as yet far too limited for us to presume to declare with any confidence what is an object in nature. Still less should we venture to assert what is *not* an object, and least of all have we any right to affirm that beauty is not an object, when we see developed, beauty of form, of colour, of sculpture and marking, so constantly throughout the organic world, and by such a great variety of means. Sometimes beauty of colour undoubtedly exists when, so far as we can see, it confers no benefit whatever on its possessor. Mr. Darwin instances arterial blood and the autumnal tints of leaves. More frequently it is accompanied by some advantage, direct or indirect; and the question is whether in such cases it has been acquired through the operation of sexual or natural selection, more particularly whether in the case of flowers the selection has been effected through the agency of insects, which have favoured the most conspicuously coloured. It remains with Mr. Mott to show in what way the facts detailed in his original letter (I hope he will pardon me for taking him back to it) fail to harmonise with that doctrine. To my mind the fact that a cultivator, by carrying out a like selection, propagating from plants which bear the largest and brightest, double or showy sterile flowers, can produce like results, supports and corroborates the doctrine rather than militates against it. Nor can I see anything discordant in the fact that the colour of fruits has been acquired through the medium of an entirely different selecting agent.

One circumstance appears to me to present some difficulty; and, although it is in no way connected with Mr. Mott's letter, I should like to mention it in the hope that others may be able to supply a satisfactory explanation: it is the case of flowers that are coloured on the outside, but white within. Where such flowers from their position or form present to view principally their exterior, as *Tulipa celsiana*, this is an adaptation that can be readily understood; but some display mostly their interior, and it is then difficult to understand the acquirement of colour outside only. I would instance *Simethis bicolor*, *Gypsophila cretica*, *Daphne jasminea*, and several species of white-rayed Compositae. *Bellidistrum nichelii*, for example, has frequently the inner surface of the ray florets quite white, and when the flower is open nothing else is seen; the colour on their outer surface only becomes visible when they close over the disc, as in dull and rainy weather.

THOMAS COMBER

Newton-le-Willows, Nov. 16

WITH reference to this question, is cross-fertilisation so desirable for the plant as is stated?

IN this country, and I believe as a rule elsewhere, brilliant flowers are produced by shrubs, climbing and herbaceous plants, while the inflorescence of trees is comparatively inconspicuous. Does it not seem probable that beauty of colour is gained at the expense of strength, majesty, and longevity?

J. S. H.

#### Droseræ

I FIND that during my absence from England many applications have been made for plants of the *Droseræ* and *Pinguiculæ*, and from the replies which have been sent on receipt of the plants they seem to have given satisfaction. Lately, however, in consequence of the weather, there has been some difficulty in obtaining *D. intermedia*, but before this is printed in your columns, all existing applications will be cleared off.

I wish to add, that in winter these plants can scarcely be expected to be as active as in spring and summer, and observers must wait patiently until spring before they may hope to obtain successful results from their observations: it cannot be necessary, I think, to feed carnivorous plants artificially during the winter; and a hot-house or conservatory cannot be absolutely necessary, as they have no such advantages in their native wilds.

G. H. HOPKINS

#### Suicide of Scorpions

THAT scorpions do commit suicide, as described by your correspondent last week, is a well-known fact. My grandfather often related how he had seen these creatures, when surrounded by a circle of glowing embers, make for the inner side of their fiery prison, then deliberately move round the inside of the circle, and when arrived at the exact spot from which they started, turn back their tails and sting themselves to death.

Clyde Wharf, Nov. 16

M. L.