

placed in Brassolis. In Kirby's Catalogue of Diurnal Lepidoptera and Supplement (1871 and 1877) we find eight genera of Brassolidæ and fifty-four species, while Dr. Stichel now enumerates eleven genera and seventy-five species, in addition to a very considerable number of forms treated for the present as subspecies.

Dr. Stichel describes the species at great length, adding tables of the genera, species, and subspecies. The synonymy of the genera and species is very fully given, and the excellent text-illustrations include the neuration of one species of each genus, and also the markings of the wings of a large number of species, both surfaces being usually figured. Descriptions are also given of the eggs, larvæ and pupæ of the insects, as far as known at present, and the range of each species is also indicated. On pp. 3 and 4 we find general information on the habits of the butterflies, and should have liked more detail under the various species; but we presume that there was either no room, or the available information on the subject was too meagre to be worth giving, except in a general manner.

W. F. K.

*The Volcanic Origin of Coal and Modern Geological Theories: a Plea for Lessening Demands on Geological Time; and for Further Separating the Life Histories of the Aqueous and Volcanic Formations.* By Col. A. T. Fraser (late R.E.). Pp. 21. (London: R. Banks and Sons, 1909.)

THE old Wernerians used to account for volcanic action by the supposed combustion of coal within the earth's crust, but the author of this pamphlet turns the tables upon them by making the volcanoes produce the coal! The way in which this feat is performed is as follows:—first by pointing out that in the sides of the active volcano Gedeh in Java the tuffs are seen to be well stratified, and look, at a distance, like old red sandstone; then the mud deposits ejected by the eruption of Tarawera in New Zealand are also stratified. Next, we have somewhat of a leap in the advance of the argument. The Java experience showed, though coal was absent, another way in which it (coal) might originate; namely, being rained down in a shower of bitumen alternately with sandstones, shales, &c. In support of this view we are told that a visit to "the quarries of Carrara and Parnassus" show that "marble is a volcanic rock," "ejected, accompanied by high-pressure steam, from a fissure and showered down." We must leave our author with the coal and marble, and not attempt to follow his leading among geological theories, old and new. We fear, judging from books advertised on a fly-leaf at the end of the one before us, that the author has been so much occupied with psychological research, occult powers of Eastern nations and the religions of the world, that he has not found time for even a very little elementary chemistry.

Cassell's "Nature" Copies (Wild Flowers). Aids to Nature Study, Brushwork, and Drawing. In twelve packets. (London: Cassell and Co., Ltd., n.d.) Price 6d. net per packet.

EACH of these packets of drawing copies contains ten examples of pictures of wild flowers executed in colours on stout plate paper. Though the best plan is to have wild flowers drawn from actual specimens, these copies may serve a useful purpose in town schools, where it is very difficult or impossible to procure the plants themselves; in any case they will add variety to the art work, and familiarise children with the beauty of common wild flowers.

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## LETTERS TO THE EDITOR.

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### August Meteoric Shower.

I HAVE summarised in a form which may be convenient for comparison some of the results of Perseid observations this year. The differences in some cases are remarkable, and sufficiently prove that to arrive at definite conclusions respecting the character of a shower a large number of materials should be consulted and averaged. Weather conditions are dissimilar, the places of observation are not equally well situated (certain positions in towns are much affected by artificial light), and there are other causes which must introduce discordances. Though comparatively few Perseids were observed at Bristol and Meltham on August 10, they were fairly numerous at Blaina and Antwerp, and on the night of August 12, when a rich display of brilliant meteors was remarked at Bristol, there was no striking exhibition witnessed at several other places.

#### Results of Perseid Observations, 1909.

	Aug.	h. m.	h. m.	h. m.	Meteors	Perseids	
C. B. Pennington, Notts.	11	...	9 0-12 0	...	3 0	...	50
Mrs. H. P. Hawkins, Brockham, Surrey	11	...	10 0-13 0	...	3 0	...	80
Miss Irene Warner, Bristol	11	...	10 0-11 37	...	1 37	...	60
	12	...	10 0-10 30	...	0 30	...	9
John Hicks, Weston-super-Mare	11	...	9 30-10 0	...	0 30	...	30
	12	...	9 30-10 30	...	1 0	...	9
Mrs. R. M. Brook, Meltham, Huddersfield	11	...	10 0-11 30	...	1 30	...	54
	10	...	10 50-12 5	...	1 15	...	30
T. K. Jenkins, Blaina	11	...	9 48-12 10	...	2 22	...	78
	12	...	9 14-10 43	...	1 29	...	12
C. L. Brook, Meltham	9	...	10 25-12 15	...	1 35	...	15
	10	...	10 25-12 25	...	1 35	...	23
	8	...	9 45-11 0	...	1 30	...	12
	9	...	9 45-11 30	...	1 30	...	8
	10	...	9 15-12 0	...	1 45	...	19
W. F. Denning, Bristol	11	...	9 5-11 50	...	2 45	...	73
	12	...	9 0-12 52	...	2 30	...	65
	13	...	9 5-11 45	...	1 45	...	25
	14	...	9 0-11 50	...	1 45	...	19
	7	...	11 50-13 0	...	1 10	...	3
	8	...	11 25-13 0	...	1 35	...	19
C. Birkenstock & another observer, Antwerp	9	...	11 0-12 20	...	1 20	...	15
	10	...	10 15-14 0	...	3 15	...	113
	11	...	10 30-14 0	...	3 30	...	129
	12	...	10 30-14 0	...	3 30	...	96
Col. E. E. Markwick, Boscombe	11	...	10 7-11 40	...	1 33	...	40
Elision Hawks, Leeds	11	...	10 30-dawn	...	—	...	175
	10	...	10 0-11 0	...	1 0	...	20
J. L. Haughton and another, Dublin	11	...	9 0-12 0	...	3 0	...	57
	12	...	8 30-10 30	...	2 0	...	50
	13	...	9 15-10 15	...	1 0	...	19

Apparently few determinations of the radiant have been made, but so many values have been found for this at previous returns that further estimates are not much needed. Photographic impressions of the trails would be of essential value as giving, not only a very exact position for the radiant, but as indicating its character and the extent of its diffusion.

W. F. DENNING.

### The Ringing of House-bells without Apparent Cause.

UNTIL I read the two letters in NATURE of July 22 and August 12 I had no idea that the ringing of house-bells without apparent cause was so fascinating a subject, as my own experience of it has been rather prosaic. One of my bells occasionally rings when no one is in the room, but it is entirely due to bad workmanship. The strength of the spring which draws the wire back after it has been pulled is only about equal to the friction of the wires, and the result is that, though it generally draws the wire back immediately after it has been pulled, yet it sometimes fails to do so at the time; but after some time, it may be hours, owing to some change in the conditions, it succeeds in drawing back the wire, when the bell again rings when no one is touching it. The bell thus rings once when it is pulled, and a second time when the spring succeeds in drawing back the wire.

The electrical explanation of any mysterious ring-