but four instead of five lobes. It resembles somewhat in outline the recent *Porana volubilis*, and, as the absence of the fifth lobe might be merely an abnormal condition of the individual example, it seemed, at first, scarcely sufficient to separate it from the genus with which all the other similar forms from the Tertiary beds had heretofore been identified.

Mr. Richard Kippist, of the Linnæan Society, has, however, within the last few days pointed out to me the much closer resemblance of the fossil to *Kydia calcycina*, an East Indian plant of the natural order *Byttneriaceæ*, and has furnished me with the recent examples of the enlarged involucre, represented in Figures 2 and 3 for comparison with the fossil. A figure of the plant is also given in Wight's *Icones plantarum Indiæ Orientalis* (vol. iii. table 880, fig. 5). Mr. Kippist remarks that "the fossil agrees far better with *Kydia* than *Porana* in the number and blunt obovate form of the sepals, as well as in the numerous nearly parallel veins, the pointed sepals of *Porana* being penniveined with an intermarginal nerve; in fact, that Wight's figure of the enlarged calyx of *Kydia calycina* is so completely identical with the fossil that the one might almost have been drawn from the other." In the fossil the inner or true calyx with the enclosed capsule appears to have become detached from the involucre (the part supposed to be represented in the fossil), though the broad scar in the centre shows clearly the point of attachment. A large proportion of the examples of *Kydia* have only four lobes to the outer calyx or involucre, but are occasionally found with five, as in Figure 2, or even with six lobes. The Hampshire and also the Swiss specimens figured by Heer vary in this way; and, although the great majority have five lobes, it seems questionable whether the whole are not more properly referable to *Kydia* than *Porana*.[1] Three examples of leaves in my possession from the Corfe leaf-bed, a continuation of that exposed in Studland Bay, agree well with the form and venation of the leaves of *Kydia calycina*.

I submit these few particulars in the belief that the evidence in favour of the affinity of the Tertiary flower-like forms with *Kydia* is equal if not superior to the claims of *Porana* to include them, though the identification of fossil with recent Phanerogamous genera must always be uncertain and difficult. Fig. 4 represents the calyx of *Calycopteris* (*Getonia*) *floribunda*, for which I am indebted to Mr. Carruthers, and which is also more like the fossil than any of the recent species of *Porana*.

NOTICES OF MEMOIRS.

Classification of Meteorites. By M. Daubrée.[2]

THE bodies which are comprised under the general name of meteorites have long since been arranged under two great divisions, the *irons* and the *stones*; it is, indeed, the division which

[1] See figures of *Porana*, op. cit., p. 516.

[2] Classification adoptée pour la collection de météorites du Muséum. Par M. Daubrée; Comptes rendus des Séances de l'Académie des Sciences, tome 65, July, 1867.

appears the most simple and natural, In examining a certain number of these masses it has been thought convenient by some to establish a third, or intermediate division, to which the names of *Mesosiderites, Lithosiderites*, or of *Siderolites*, have been given. However convenient may appear this latter division, it presents some difficulties when we examine the passages which connect the extreme terms of the series; viz., from that of massive iron to that of the stone exempt from it. It is thus that certain specimens have been placed by some in the intermediate division, and by others in the third, or in the first division. In not admitting this division there are also difficulties, particularly for the meteorites, such as that of Pallas, where the stony grains are disseminated amongst the metallic mass, and which thus forms the first link between the *irons* and the *stones*. In placing the collection of meteorites in the new cabinet of the museum of the Jardin des Plantes, at Paris, M. Daubrée has replaced the purely chronological arrangement formerly adopted, by a classification which enables one to perceive the relations of this series of planetary bodies.

M. Daubrée has adopted four great divisions, to each of which he has given particular names, which, although somewhat new and complicated, are intended to facilitate the study of these bodies. It is exclusively the solid, or coherent meteorites which are classified, leaving out of consideration the gaseous or liquid matters which may accompany the solid masses, and also the falls of powder which have sometimes been recognised. Metallic iron, which is absent in all terrestrial rocks [?], and is found in nearly all meteorites, has afforded the most natural basis for the great divisions, both as to its arrangement and mode of association with the stony matter, as by its relative proportion. The term *Siderites* is proposed for the meteorites containing metallic iron, and *Asiderites* for those without it. The *Siderites* may be deprived of all stony matter, or contain it in the most minute quantity; these masses comprise the group *Holosidères*, corresponding to the meteoric irons properly so-called; as, for example, the masses of Caille and Charcas. When the *Siderites* contain silicates, the iron may exist as a *continuous mass*, similar to a sponge, the stony matter occupying the vacuities; or the iron may occur in more or less large *grains*, disseminated in the stony matrix. In the first case the *Siderites* belong to the division *Syssidères*; in the second to that of *Sporadosidères*. The *Syssidères* may contain the stony matter in two states, corresponding to those indicated for the iron; either in distinct, disseminated grains, as is observed in the iron of Pallas, in that of Atacama, in that of Tuczon,[1] etc.; or in the form of a continuous mass, entangled as a network with the iron, similar to that of the iron of Rittersgrün. The division of *Sporadosidères* contains the greatest number of known meteorites. For the convenience of study, M. Daubrée has divided them into three sub-groups, under the names of *Polysidères, Oligo-*

[1] The specimen from Tuczon, in the British Museum, presented by the town-authorities of San Francisco, 1863, shows that this meteorite should be classed with the *Siderites*.—J. M.

METEORITES—SOLID AND COHERENT.

Divisions.		Groups.	Sub-Groups.	Examples.	Densities.
I. *Siderites.* Meteorites containing iron in a metallic state	Not containing stony matter	1. *Holosidères*		Charcas	7·0 to 8·0
	Containing both iron and stony matter	Iron in the form of a continuous mass. 2. *Syssidères.*		Rittersgrün	7·1 to 7·8
		Iron disseminated in grains. 3. *Sporadosidères.*	*Polysidères* Quantity of iron considerable.	Sierra del Chaco	6·5 to 7·0
			Oligosidères Quantity of iron small.	Aumale	3·1 to 3·8
			Cryptosidères Iron not visible to the eye.	Chassigny	3·5
				Juvinas	3·0 to 3·2
II. *Asiderites.* Meteorites not containing iron in a metallic state		4. *Asidères.*		Orgueil	1·9 to 3·0

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sidères, and *Cryptosidères*, according as the iron is—in great quantity (Sierra del Chaco); in small quantity (Saint-Mesmin, Aumale, etc.); or in indiscernible proportion (Juvinas, Chassigny). These sub-divisions are far from having the same value; but they each correspond to sensible variations in the density.

The fourth sub-division of coherent meteorites is that of *Asidères*, corresponding to the *Asiderites*, which is characterized by the absence of metallic iron. The number of specimens of this latter group is very limited, and nearly restricted to the carbonaceous meteorites (Alais, Orgueil). Such is the principle on which the classification is based; the differences and relations which are found in the two types of meteorites are shown in the preceding table.

Note.—The meteorite of Sierra del Chaco noticed above resembles, according to M. Gustav Rose, that of Hainholz, described by Reichenbach. Both are very different from other meteorites; they present the remarkable peculiarity of containing Augite, which is not accompanied by anorthite, as in the meteorite of Juvenas, but which is, on the contrary, associated with iron containing nickel, with peridot, and magnetic pyrites. Besides, the nickel, iron, and pyrites, on the one hand, and the peridot and augite on the other, occur in nearly equal proportions. For these meteorites M. Rose has proposed a special name, that of *mesosiderites*.[1] The arrangement of the meteorites in the museum of the Berlin University, by M. G. Rose, is based on their mineral character, and forms two divisions—the metallic and the stony meteorites, the first containing meteoric iron and the Pallasite, the second the Chondrites, Howardites, Chassignites, Chladnites, and lastly the Eukrites, which contain augite as well as anorthite. The meteorites of Alais and the Cape (and we may add that from Australia) contain carbon, and form with the mesosiderites two other groups.

We may here refer to the collection of meteorites in the British Museum, which, under the able direction of the present keeper, has been so greatly augmented that it now stands unrivalled both for extent and value of the specimens, the number being about 260. They are arranged in two cases; one contains the stony varieties or Aërolites, characterized by the presence of minute stony spherules. These are the Chondrites, Howardites, Chassignites, etc. They all contain meteoric iron in fine particles disseminated through them. In the other case are displayed the Siderolites and the Aëro-siderites. The former are masses of meteoric iron, containing stony matter; the latter consist of the metallic alloy of iron and nickel, with small amounts of other metals known as "meteoric iron." They also contain mechanical admixtures of compounds of these metals with phosphorus and with sulphur.—J. M.

[1] *Vide* Sorby on the microscopical structure of meteorites. Proc. Roy. Soc., June, 1864.