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Fritz H. Cramer-Díez (*).—FIRST REPORT ON THE OCCURRENCE OF ACRITARCHS IN THE OVILLE FORMATION OF LEON, SPAIN.

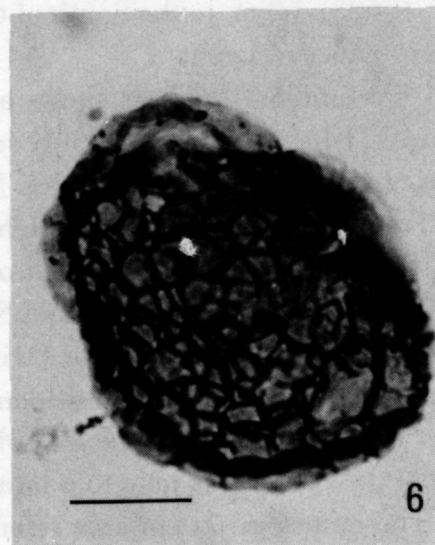
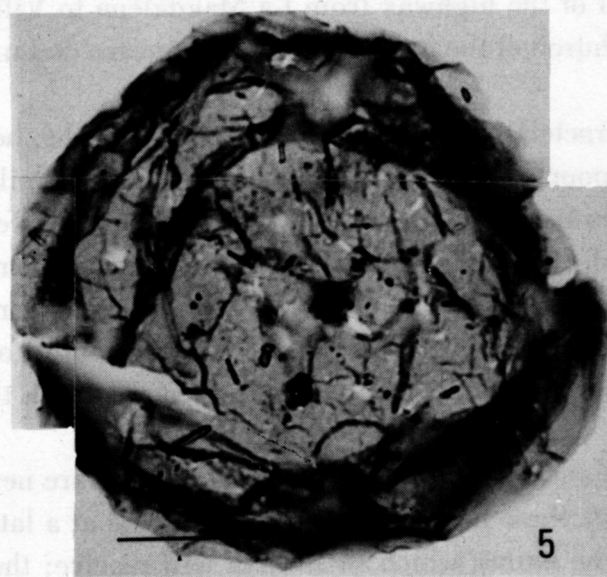
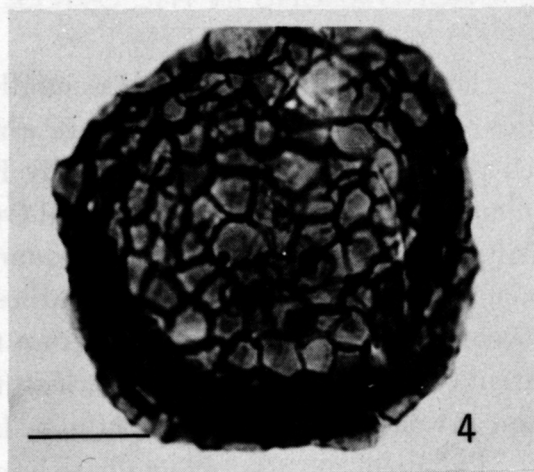
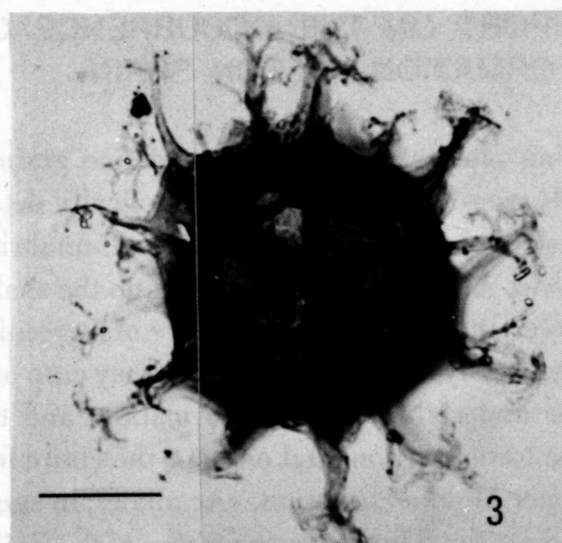
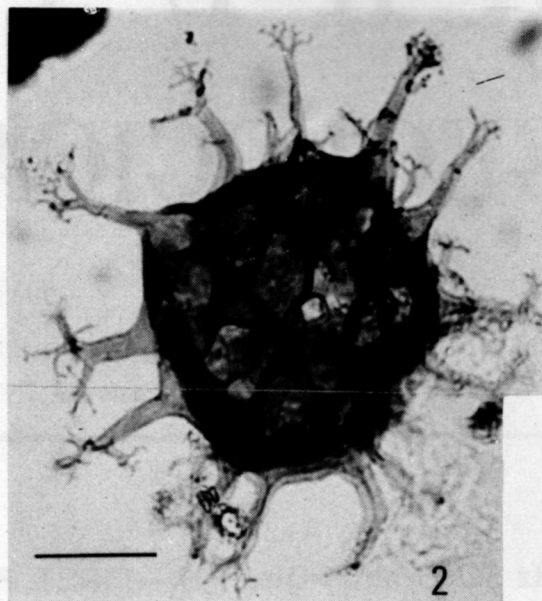
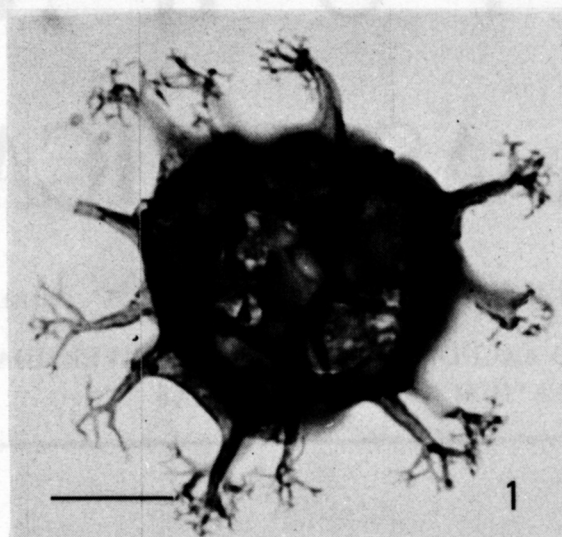
The Oville Formation is essentially an alternation of coarse and fine grained clastics of Upper Middle Cambrian age which crops out in a series of tectonically determined parallel belts that run essentially East-West along the grain of the Cantabrian Mountains in the provinces of León and Oviedo. At the base of the formation the shales and siltstones dominate; at the top the quartzites and sandstones. These are of a greenish gray color and weather so easily that gullies generally are developed where they crop out. On account of megafossil evidence from the underlying Láncara Formation, and the apparent continuity of the section, at least the lower portion, and perhaps the entire formation as well, the Oville is thought to be Upper Middle Cambrian, «Acadian», in age.

Palynomorph assemblages have been discovered in the lower portion of the Oville Formation just below the containing wall of the highway from La Magdalena to Villablino (C-623), 60 m. to the South of the church of the former village of Láncara de Luna in the province of León.

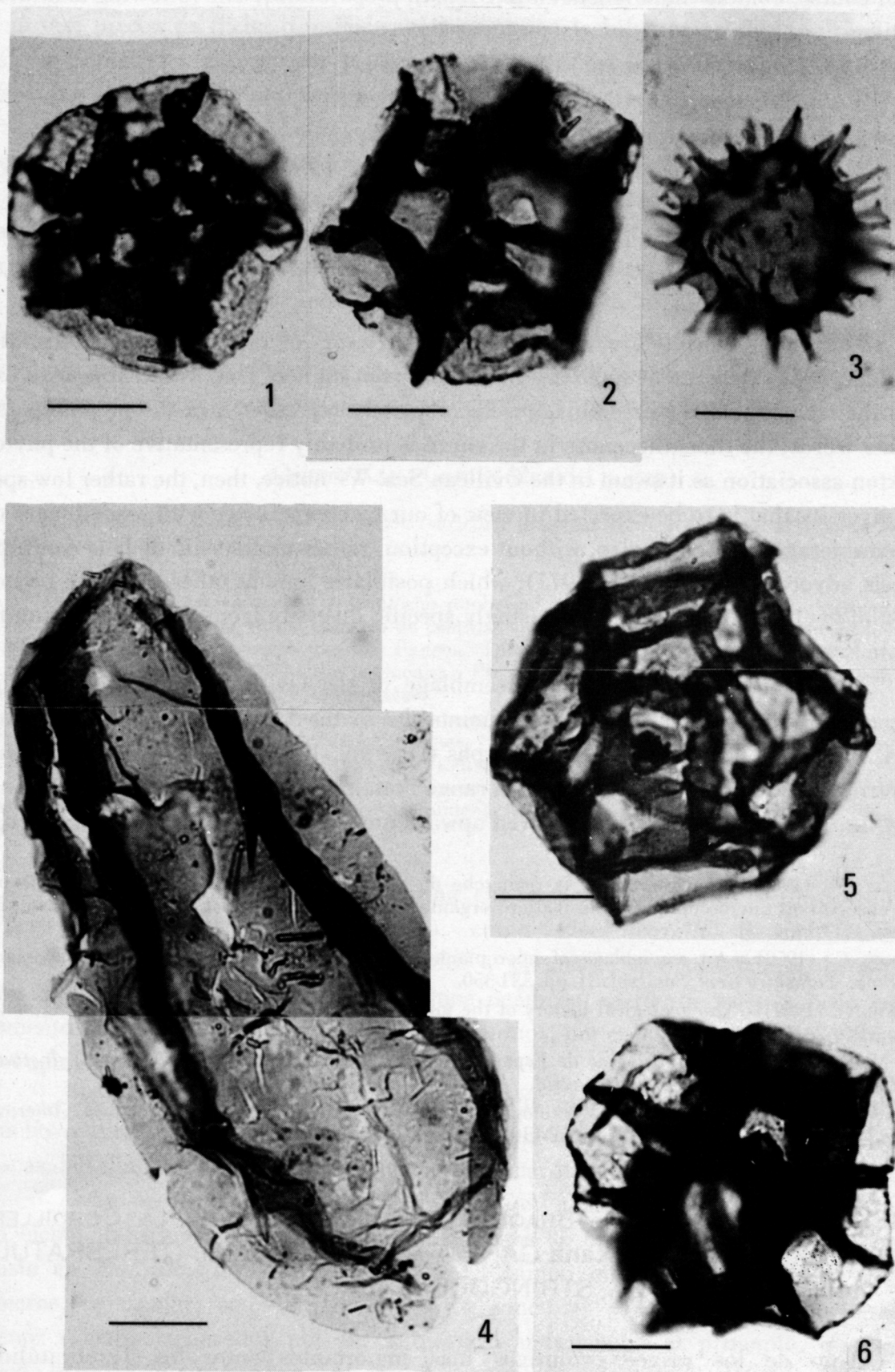
Preliminary analysis shows a characteristic assemblage of acanthomorphs, herkomorphs, leiospheres and possibly some poorly preserved algae of a morphology similar to that of *Gloeocapsamorpha prisca*. No chitinozoans are present. The assemblage differs from Tremadocian, and perhaps slightly older, floras in that neither ooidians nor diacrodians are present. *Saharidia* which occurs below the Tremadocian ooidian and diacrodian floras in Tunisia, Algeria and Saudi Arabia, is also absent. This would point to a pre-Upper Cambrian age of the Oville assemblage, an age well in agreement with the one arrived at from megafossil evidence.

Except for perhaps the leiospheres and the micrhystridid, all acritarchs are new. To keep the size of this note to a minimum, these new forms will be described at a later date. The names in parenthesis refer to the names which these taxa will receive; they

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1, 2, 3: *Multiplicisphaeridium* sp. I; 4, 6: *Zonosphaeridium* sp. I;
5: *Leiosphaeridia* sp. The bar equals 10 microns.



1, 2, 5, 6: *Cymatiosphaera* sp. I; 3: *Multiplicisphaeridium* sp. 2;
4: *Leiosphaeridia* sp. The bar equals 10 microns.

are, of course, *nomina nuda* (CRAMER & DíEZ, in preparation). The following taxa were identified:

Multiplicisphaeridium sp. I (*M. Lancarae*), Pl. 1:1, 2, 3;

Multiplicisphaeridium sp. II (*M. martae*), Pl. 2:3;

Multiplicisphaeridium sp. III (*M. raquelinae*);

Micrhystridium sp. cf. *M. shinetonensis* DOWNIE 1959;

Cymatiosphaera sp. I (*C. ovillensis*), Pl. 2:1, 2, 5, 6;

Zonosphaeridium sp. I. (*Z. ovillensis*), Pl. 1:4, 6;

Synsphaeridium sp.;

Leiosphaeridia spp.

The palynomorphs are well preserved; in terms of organic eometamorphism (CORREIA, 1969) they are at stage N=3, certainly not higher. This would appear to exclude the chance that the assemblage is incompletely represented in the preparations; in other words, the thanathocenose in the slides is probably representative of the phytoplankton association as it swam in the Ovillean Sea. We notice, then, the rather low specific diversity that is to be expected in view of our own experience with assemblages of comparable age. These are also, without exception, rather undiversified. This confirms a thesis advocated by Tappan (1971), which postulates among other things, a phytoplankton evolution towards an increasingly specific diversity from the Precambrian to the late Lower Paleozoic.

In conclusion, the acritarch assemblage of the Oville Formation shows the presence of well preserved marine palynomorphs in the Upper Middle Cambrian of Spain. The range bottom of the herkomorphs (DOWNIE, 1967) must be extended downward from the Tremadocian; whereas the range bottom of the ovidians and diacrodians, (DOWNIE, 1967) *in Spain*, must be moved upward until after the Upper Middle Cambrian.

CORREIA, M. (1969).—Contribution à la recherche de zones favorables à la genèse du pétrole par l'observation microscopique de la matière organique figurée. *Revue Inst. français Pétr.*, vol. 24, pp. 1417-1454.

DOWNIE, C. (1959).—An assemblage of microplankton from the Shineton Shales (Tremadocian). *Proc., Yorkshire Geol. Soc.*, vol. 31, pp. 331-350.

DOWNIE, C. (1967).—The geological history of the microplankton. *Rev. Palaeobotan. Palynol.*, vol. I, pp. 269-281.

I. G. M. E. (1971).—Mapa geológico de España, Escala 1:200.000. Hoja núm. 10 (Mieres). *Instituto Geológico y Minero de España, Madrid*.

TAPPAN, H. (1971).—Microplankton, ecological succession and evolution. *Proc., North American Paleont. Conv., 1969*, part H, pp. 1058-1103.

J. L. García-Alcalde (*).—BRAQUIÓPODOS DEVÓNICOS DE LA CORDILLERA CANTÁBRICA. 2) GENERO *Xana* GARCIA-ALCALDE, n. gen. (TEREBRATULIDA, STRINGOCEPHALACEA).

Uno de los rasgos evolutivos más importantes entre los Terebratúlidos primitivos parece haber sido la creciente complejidad del lofóforo, reflejada en la de su soporte material: el braquidio.

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