SÉANCE MENSUELLE DU MARDI 17 DÉCEMBRE 1968.

Présidence de M. I. DE MAGNÉE, *Président.*

Présentation d'un nouveau membre :

M. ERNEST LAURENT, Ingénieur civil A.I.A., Répétiteur à l'Ecole royale militaire, avenue de la Renaissance, Bruxelles 4; présenté par MM. J Parent et J. Scheere.

Communications des membres :

FR. CRAMER. — Geron, *on Acritarch genus from the Silurian.* (Texte ci-après.)

P.-L. MAUBEUGE. — *Méditations sur quelques bancs calcaires à propos de figures sédimentaires du Jurassique (Toarcien ferrugineux et Oxfordien moyen lorrain).* (Texte ci-après.)

J. SCHEERE et R. VAN TASSEL. — *Phosphorites du passage Viséen-Namurien à Blaton (province de Hainaut) et à Warnant (province de Namur).* (Texte ci-après.)

P. KUMMERT. — *Propriétés optiques de la lueshite.* (Texte ci-après.)

F. ROBASZYNSKI. — *Etude de quelques propriétés distinctives des löllingites, mispickels et skutterudites (optique, diffraction X, microdureté, A.T.D.).* (Texte ci-après.)

I. GODFRIAUX. — *Quelques aspects sédimentologiques de la Craie de Maisières.* (Texte ci-après.)

A. BEUGNIES. — *Les roches à quartz dihexaédrique du Franc-Bois de Willerzie.* (Texte ci-après.)

Geron, an Acritarch Genus from the Silurian (*),

by FRITZ H. CRAMER.

1. ABSTRACT.

Three acanthomorphitic acritarch taxa with morphologically transitional characters are described. *Geron guerillerus* ranges from the late Llandoverian (*s.l.*) into the early Gedinnian; *G. gracillis* and *G. amabilis* range from somewhere in the Wenlockian to the late Ludlovian. The taxa have been recorded from sediments in an area to the paleo-South of the average position of the 30 degrees S paleolatitude over the time span between .425 and .395 Aeons.

(*) Texte remis en séance.

2. ACKNOWLEDGEMENT.

The research reported here has been supported in part by Grants CRAM-04-034 and RESC-12-036 from the Research Council of the Florida State University. Mrs. Carmen Díez de Cramer has carried out most of the processing and analysis of the material on which this paper is based. The author expresses his gratitude for the support received.

3. THE GENUS GERON.

Geron, at present, comprises three rather variable species, *G. guerillerus* CRAMER 1967, (type species of the genus), *G. gracilis* CRAMER (New Species) and *G. amabilis* CRAMER (New Species). Altough the species show a morphology which varies over wide extremes, the relative paucity of forms intermediate between the typical specimens of *G. guerillerus, G. gracilis* and *G. amabilis,* suggests that « pure » specimens of the species consist in more easily realized phenotypes of a complex with at least three genotypic variation foci.

GERON CRAMER, 1967 emended.

1967, *Geron* CRAMER, Boletín, I.G.M., España, nr. 77, p. 254, Pl. II : 22, 23; fig. 4 : 2.

Diagnosis. — Complex, acanthomorphitic acritarch composed of an ovoid, spherical or ellipsoidal inner body or cyst which is concentrically enveloped by a first outer membrane or ectoderm which (*a*) is drawn out at one pole (the basal pole), into one to numerous hollow to filose spines or (*b*) forms a cylindrical skirt terminating into one or numerous filose sculptural op grocessal elements. The first outer membrane (or ectoderm), is generally smooth but may be adorned by tiuy sculptural elements, such as broad based grana, spines, etc. In well preserved specimens of at least one species (*G. guerillerus*) a third membrane, the periderm, may be present. It was not determined how the periderm is attached to the ectoderm. The periderm is sacklike in form; the opening permitting the long processes formed by the continuation of the ectodermal membrane to stick. The periderm is adorned by tiny, ideally palmate, sculptural elements, connected distally to one another by a anastomosing netlike structure such as that found in the genus representatives of *Tunisphaeridium.*

Type species of the genus : *Geron guerillerus* CRAMER, 1967 emended.

Geron guerillerus CRAMER, 1967 emended.
(Plate I : 1-5, textfigures 1, 2.)

1967, *Geron guerillerus* CRAMER, Boletín, I.G.M., España, nr. 77, p. 254; Pl. II : 22, 23; fig. 4 : 2.

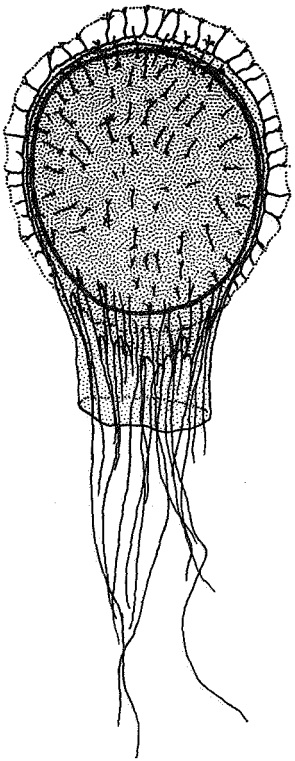


FIG. 1. — *Geron guerillerus* CRAMER, 1967 emended.

Diagnosis. — *G. guerillerus* conforms with the generic definition, except for the following characters : (i) The numerous processes are filiform, long and flexible and originate at the termination of the short cylindrical ectodermal skirt. They are up to 50μ long, 1I to 2.5μ thick at the bases and taper distally; (ii). The ectoderm is thinner and more transparent than the endoderm. It is about 0,5μ thick and tends to be wrinkled and to randomly split above the equator, by which process the central cyst may become separated from the remainder of the specimen. The suture is irregular in form but is generally parallel to the equator.

Dimensions. — Diameter of body, 20 tot 25μ (cyst a few microns smaller); length, including processes, up to 150μ.

Holotype. — 2714A02.1132.336.M20,49964.

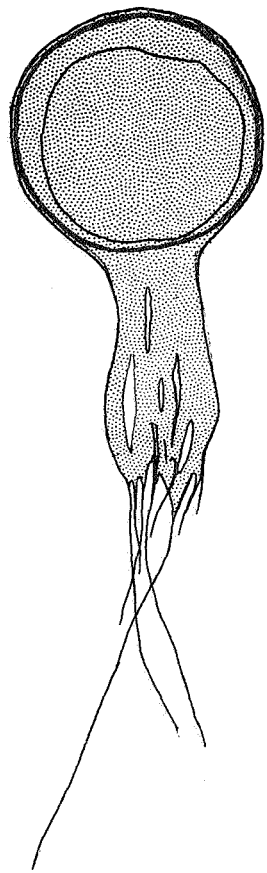


FIG. 2. — *Geron guerillerus* CRAMER, 1967 emended.

Stratum typicum. — San Pedro Formation, Middle to Late Silurian NW Spain.

Locus typicus. — Villamanín, Province of León, NW Spain; just north of village, just south of contact of San Pedro Formation and thrust fault or nappe on Highway C-630, at west side of railroad out.

Remarks. — *G. guerillerus* is a morphological rather variable species; fragments bearing the processes are easily recognized; the ellipsoidal to sperical cyst, however, is uncharacteristic and cannot be found back if it occurs outside the parent specimen.

Distribution. — Spain: Wenlockian to basal Lower Gedinian; Saudi Arabia: undivided post-Lower Silurian (?) in well cuttings; Ontario and New York: Neahga shale [Graptolite Zone 23 (?)], early Tarannonian.

Geron gracilis CRAMER (New Species).
(Plate I: 6, 7, 10?, 12*; textfigures 3, 4.)

Diagnosis. — *G. gracilis* conforms with the generic definition, except for the following characters: (i) The main processes are few in number; one to five, generally there are two. When more

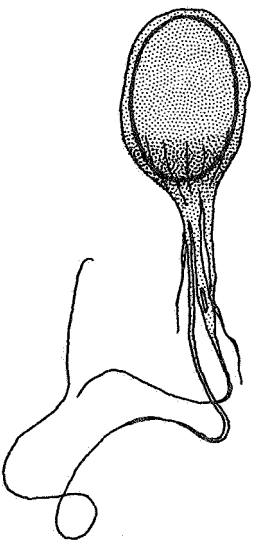


FIG. 3. — *Geron gracilis* CRAMER (New Species).

than two main processes are present, there are at least two long more solid ones, whereas the others are shorter and shorter. In addition to the main process there are especially in forms transitional to *G. guerillerus,* numerous rather short ones. The main processes

are long and slender. They are curved; sometimes helicoidally enrolled, and clearly very flexible; (ii) All processes originate at the basal pole, and apparently originate from the very short ectodermal skirt only; (iii) Over the basal portion, say over the lower one-third,

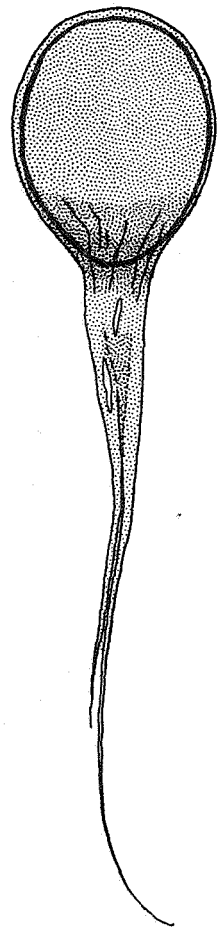


FIG. 4. — *Geron gracilis* CRAMER (New Species).

of the main processes an anastomosing pattern may occur between the main and some of the secondary processes. In some specimens the processes appear to be connected distally; (iv) In one specimen a flat perforate plate-like structure of about 5μ diameter was found at the distal connection point of the processes; (v) The endoderm is thin, and of approximately the same transparency (and hence, thick-

ness) as the ectoderm, which is between 0.5 and 1μ thick; (vi) The vesicle walls are apparently unilayered. The ectoderm of many specimens is granulate to spinose at the apical pole. The endoderm and periderm are smooth.

Dimensions. — Maximum diameter of body, 40μ (cyst a few microns smaller). Length, including processes, up to 150μ.

Holotype. — 005745B10.998.310.M20,49964 (Plate I : 12 *).

Stratum typicum. — Furada Formation, Late Silurian, NW Spain.

Locus typicus. — Selviella, Province of Oviedo, NW Spain, at route C-623, topografically 150 m to the N of the base of the Furada Formation along road and river cut.

Distribution. — Spain : Wenlockian, Ludlovian; Saudi Arabia : undivided post-Lower Silurian from wall cuttings.

Geron amabilis CRAMER (New Species).
(Plate I : 8, 9 *, 11; Textfigure.)

Diagnosis. — *G. amabilis* conforms with the generic definition, except for the following characters. (i) The processes are few in number : one to three, but generally there is but one. When more than one process is present, there is one long, solid process, the main one, while the other processes are more slender and usually shorter. All processes are parallel and originate from the very short ectodermal skirt. The main processe is stiff, elongate-conical and, when undamaged distally closed; (ii) There is a distinct darkening of the ectoderm at the basal portion of the processes; however, the darkening seems to be unaccompanied by ectoderm thickness changes as observable under 1,250x; (iii) The vesicle walls are apparently unilayered and are smooth to microsculutured; (iv) The ectoderm is slightly less than 1μ thick; the endoderm is of similar transparency and therefore probably of similar thickness as the ectoderm; (v) No periderm observed.

Dimensions. — Maximum diameter of body 3.5μ (cyst a few microns smaller); length, including the processes up to 145μ.

Holotype. — 514B10.884.279.M20,49964. (Plate I: 9 *).

Stratum typicum. — Furada Formation, Late Silurian, NW Spain.

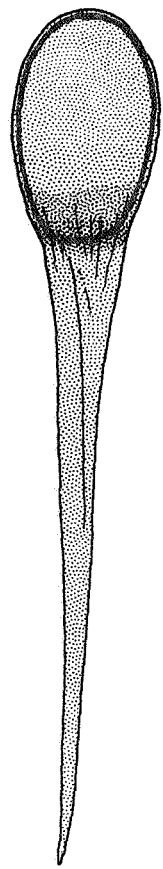


FIG. 5. — *Geron amabilis* CRAMER (New Species).

Locus typicus. — Selviella, Province of Oviedo, NW Spain, at route C-623, topografically 150 m to the N of the base of the Furada Formation along road and river cut.

Remarks. — *Geron amabilis, G. gracilis* and *G. guerillerus* occur together in the Northwest Spanish Silurian material examined by the author. Although the taxa are similar in basic morphology

and construction; the « species », as defined here, are apparently more easily realized phenotypic foci of one genotype, or perhaps a series of genotypes, with rather variable characters. This is illustrated by the rareness of the intermediate forms in the material examined. Whether this peculiar frequency pattern is due to non-randomness in sampling, or is an evolutionary trend which can be distinguished only because the samples are non-contemporaneous, is not clear at this time.

Distribution. — Spain : Ludlovian.

4. TYPE MATERIAL.

At present, all holotypes are in the author's collection of palynological slides. Upon the completion of author's research project on the regional distribution of Silurian palynomorphs, they will be deposited in a permanent slide collection at the Departement of Geology, of the Florida State University in accordance with the recommendations in the International Code of Botanical Nomenclature.

5. BIBLIOGRAPHIC REFERENCES.

BERRY, W.B.N. and BOUCOT, A. J., 1968, [in press], Silurian of North America, *G. S. A.*, Mem.

CRAMER, F. H., 1967, Palynology of Silurian and Devonian Rocks in Northwest Spain. (*Boletín, Inst. Geol. Min. España,* Nr. 77, pp. 255-286, Pls. I-V.)

— 1968, Silurian Palynologic Microfossils and Paleolatitudes. (*N. Jb. Geol. Palaont.*, Mh., v. 10, pp. 591-597.)

— 1968, Consideraciones sobre la Palinología y las Paleolatitudes Silúricas a Propósita del Microplancton Silúrico de las Montañas Cantábricas del Noroeste de España. (*Comun., Serv. Geol. Portugal,* 1969, v. 53, pp. 66-94.)

ELLES, G. L. and WOOD, M. R., 1901-1918, A Monograph of British Graptolites. (*Pal. Soc. Monogr.*)

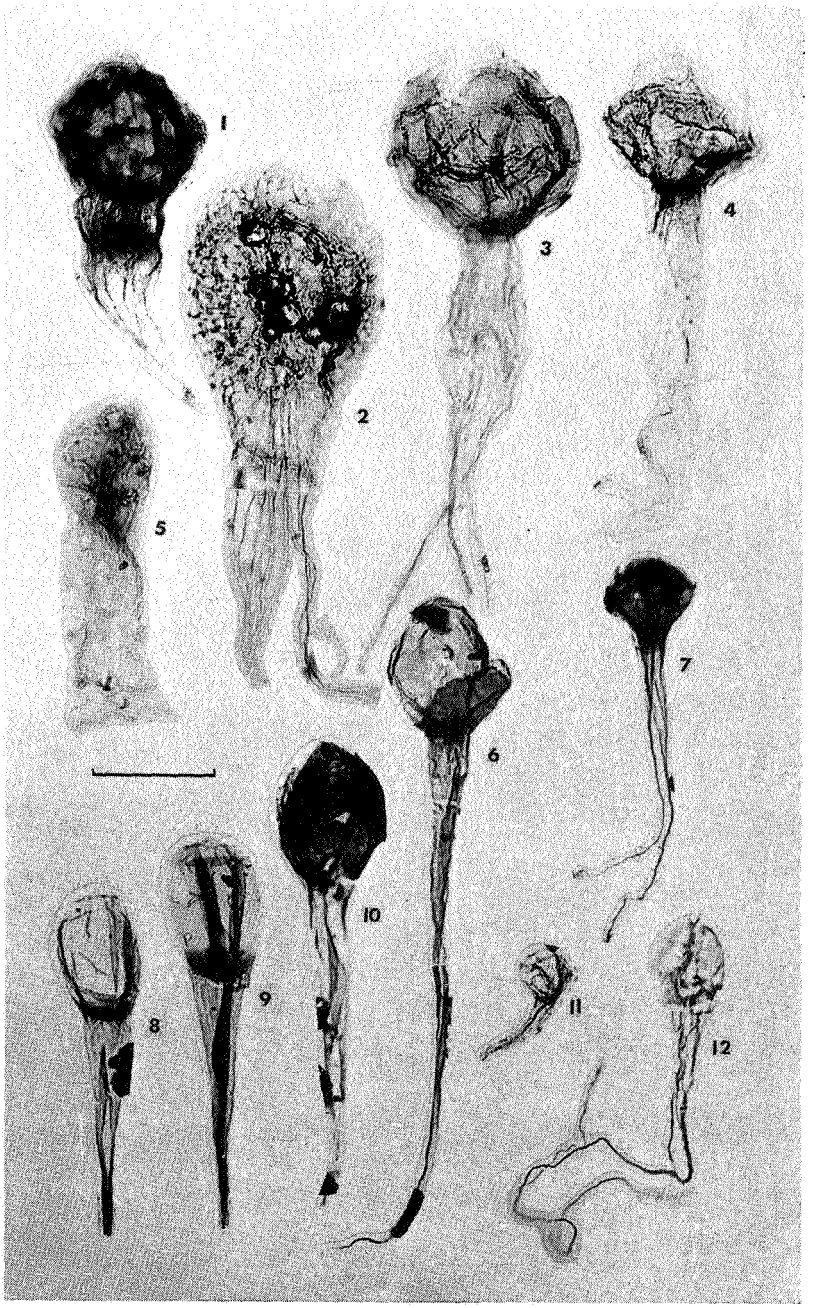
TERMIER, H. et TERMIER, G., 1964, Les Temps Fossilifères. Ed. Masson & Cie., Paris.

PLATE I

EXPLANATION OF PLATE I.

1. *Geron guerillerus* CRAMER 1967, emended, [holotype].
2. *Geron guerillerus* CRAMER 1967, emended. Complete specimen.
3, 4, 5. *Geron guerillerus* CRAMER 1967, emended. Specimens with stripped-off periderm.
6, 7. *Geron gracilis* CRAMER (New Species).
8. *Geron amabilis* CRAMER (New Species).
9. *Geron amabilis* CRAMER (New Species), [holotype].
10. *Geron gracilis* CRAMER (New Species), morphologically transitional to. *Geron amabilis.*
11. *Geron amabilis* CRAMER (New Species).
12. *Geron gracilis* CRAMER (New Species).
12. *Geron gracilis* CRAMER (New Species), [holotype].

Backgrounds of all photographs retouched; no retouching, however, on illustrations of specimens themselves. The bar represents 30 μ for all specimens illustrated except for nr. 7, where the bar equals 75 μ. Photographs taken on ADOX KB 14, printed on Kodak F4 paper.


1
2
3
4
5
6
7
8
9
10
11
12