ing calcareous ridge of Chianello Mount, highlighted that a 1 m thick layer containing the first Paleocenic Alveolinae (Upper Paleocene) marks the passage from the Upper Cretaceous to the Paleocene in the entire area. This Alveolinae horizon at Vesole Mount, as pointed out by Sgrosso (1968), is present in interval «*i*» of the stratigraphic sequence, at least 70 m above the decapod crustacean Plattenkalk.

Sedimentological and palaeoenvironmental remarks

Wackestone-packstone horizons with a «normal» inner platform, lagoonal microfauna are present at the base of Plattenkalk. A *Microcodium* bioerosion horizon (Figs. 3, 6) lies just below the first Plattenkalk layers and may prove an emersion phase of the area, before the transition to a strongly restricted environment.

The close lamination that marks the Plattenkalk of Vesole Mount, the widespread presence of bitumen and the marly component of the laminae represent evidences of a low carbonatic sedimentation rate, with low oxygenated and semi-stagnant waters close to the bottom, such as an inner platform stagnant lagoon. However, some Plattenkalk intervals show a undulated lamination, probably due to transitory currents, stromatolitic horizons and, sometimes, graded intraclastic layers showing, at their base, both muddy clasts and dried stromatolitic «*chips*» removed from the bottom and resedimented, probably by storms (Fig. 7).

Moreover, the sampling in a continuous sequence of a restricted portion (about 30 cm thick), but well representative of the general facies of subinterval *g5* of the Plattenkalk, highlighted, by the study of thin sections, that the millimetric laminae have often a graded structure (Fig. 8), probably due to tide-sedimentation processes that regularly supplied new fine material depositing by decantation (Archer *et al.*, 1990; Archer & Feldman, 1994). Bioturbation (Fig. 9a) is sometimes present, causing disgregation of the laminae. Most of the mud forming the laminae and thin layers consists of crustacean fecal pellets (Fig. 9b), surely made by the same population of the basin. The disarticulated calcitic fragments of *Microcodium* alga sometimes form small lenticular heaps inside muddy sediment.

Decapod crustaceans are sometimes very abundant on the surface of the laminae (Fig. 10) and they are often in good state of preservation. They are sometimes disarticulated and often associated with many turreted gastropods forming a monospecific population (Figs. 11a, 12a). Gastropods are also present in the thicker layers, where crustaceans are generally absent.

The above reported fossilization conditions allow to confirm a protected lagoonal environment, with a low sedimentation rate. A large quantity of crustacean decapods exuviae accumulated on the bottom during the starvation periods, but real mass-mortalities occurred only periodically; these last are witnessed by some horizons containing very well preserved crustaceans that often show a darker colour, still preserving the soft-tissues derived, dark organic matter in the carapace. Turriculated gastropods instead, closely recall the present coastal lagoons and tide puddles – often populated by *Cerithium* – with high temperatures and often hypersaline environment, with oligotypic faunae. The presence of charophyta gyrogonites in some layers may prove freshwater periodic contributions.

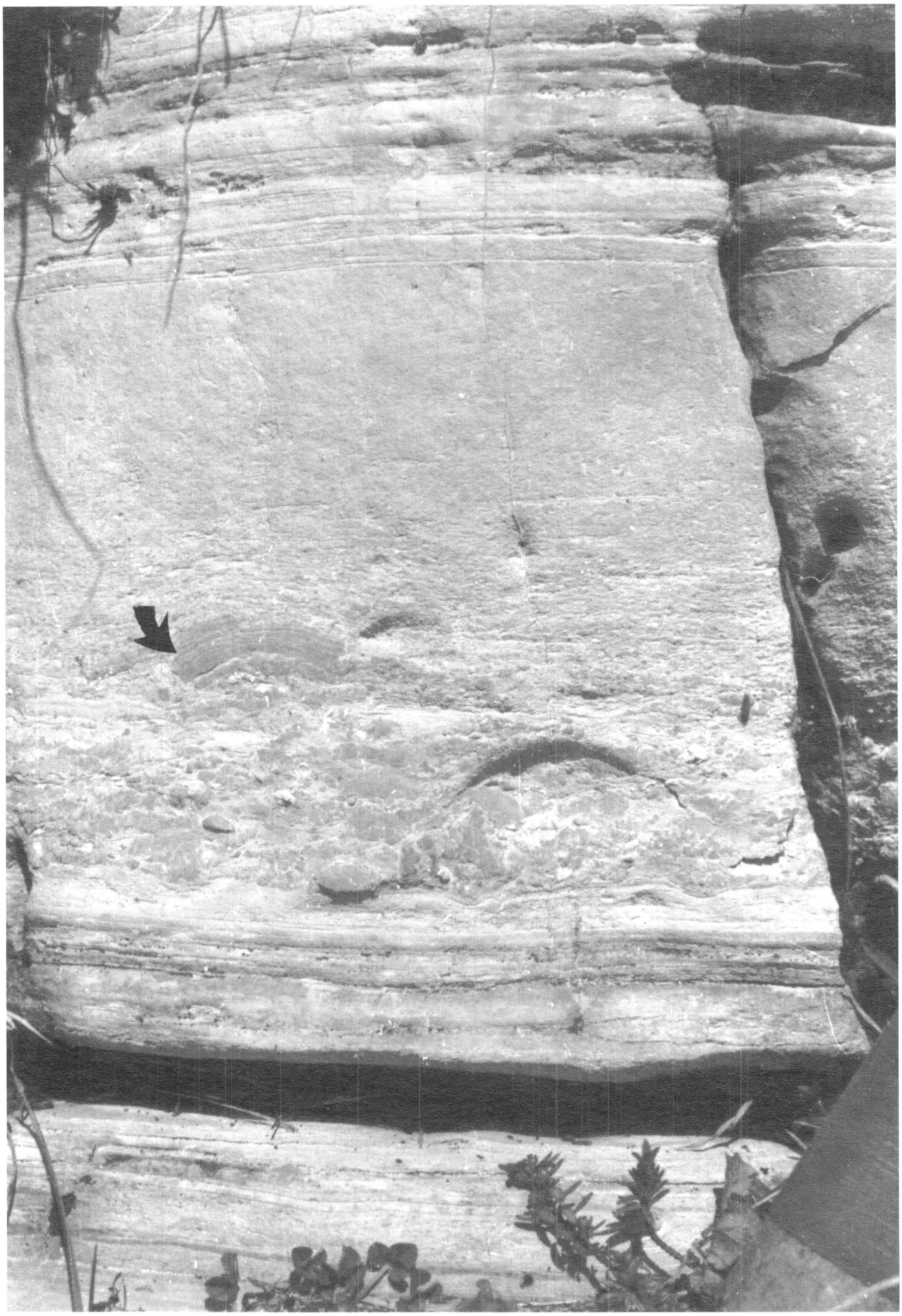

Fig. 7 - Detail of the Plattenkalk with decapod crustaceans of Vesole Mount. A storm-layer is visible intercalated between regularly laminated horizons. The storm-layer shows a clear grading of the clasts from the base toward the top. Among clasts in the basal part, stromatolitic chips (indicated by the arrow) displaced from the bottom and resedimented, are present. Magnification: 1x. Horizon and locality: Vesole Mount, Plattenkalk with decapod crustaceans (subinterval *g5*).

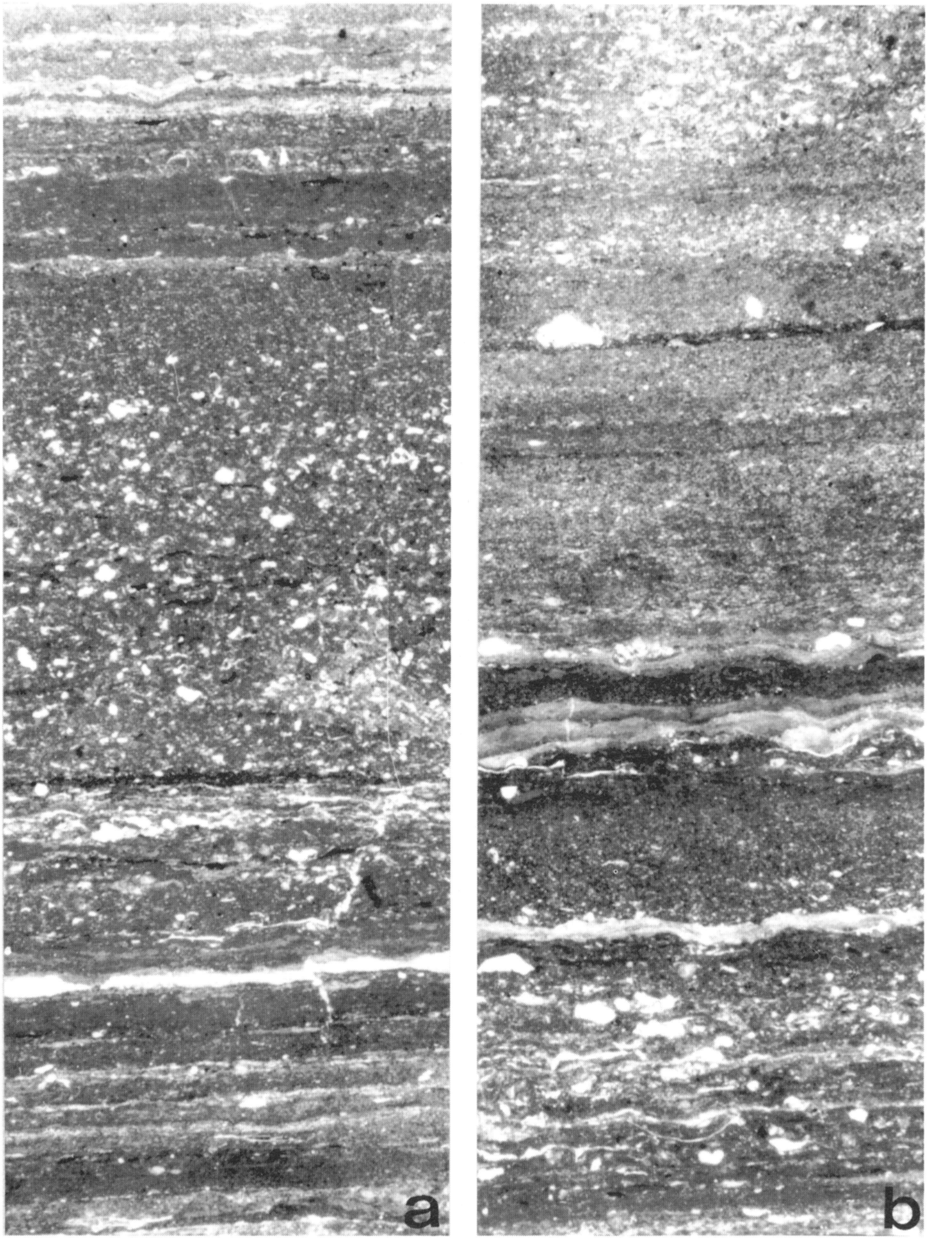

Fig. 8 - Details of the thin-laminated strata of the Plattenkalk of Vesole Mount. Notice the finely graded structure of some sedimentary micro-horizons (e.g.: the central part of the photo *a*), probably due to the decantation of fine sediment washed in the basin by tides. In photo *a* (lower and upper parts) and in photo *b* (central part) are also visible thin, darker and more or less regular laminae and irregular, thin, greyish laminae. The first are probably due to decantation and heap of fine organic sediment on the bottom; the second are probably due to the development of algal films on the bottom. The fine-grained material in the laminae and in the microturbidite layers is mainly constituted by ostracod tests and small, recrystallized foraminifers. Thin sections - Fig. 8a: VES.1Pa about 12x; Fig. 8b: VES.7P about 16x. Age: Upper Cretaceous (Campanian-Maastrichtian). Horizon and locality: Vesole Mount, Plattenkalk with decapod crustaceans (subinterval *g5*).

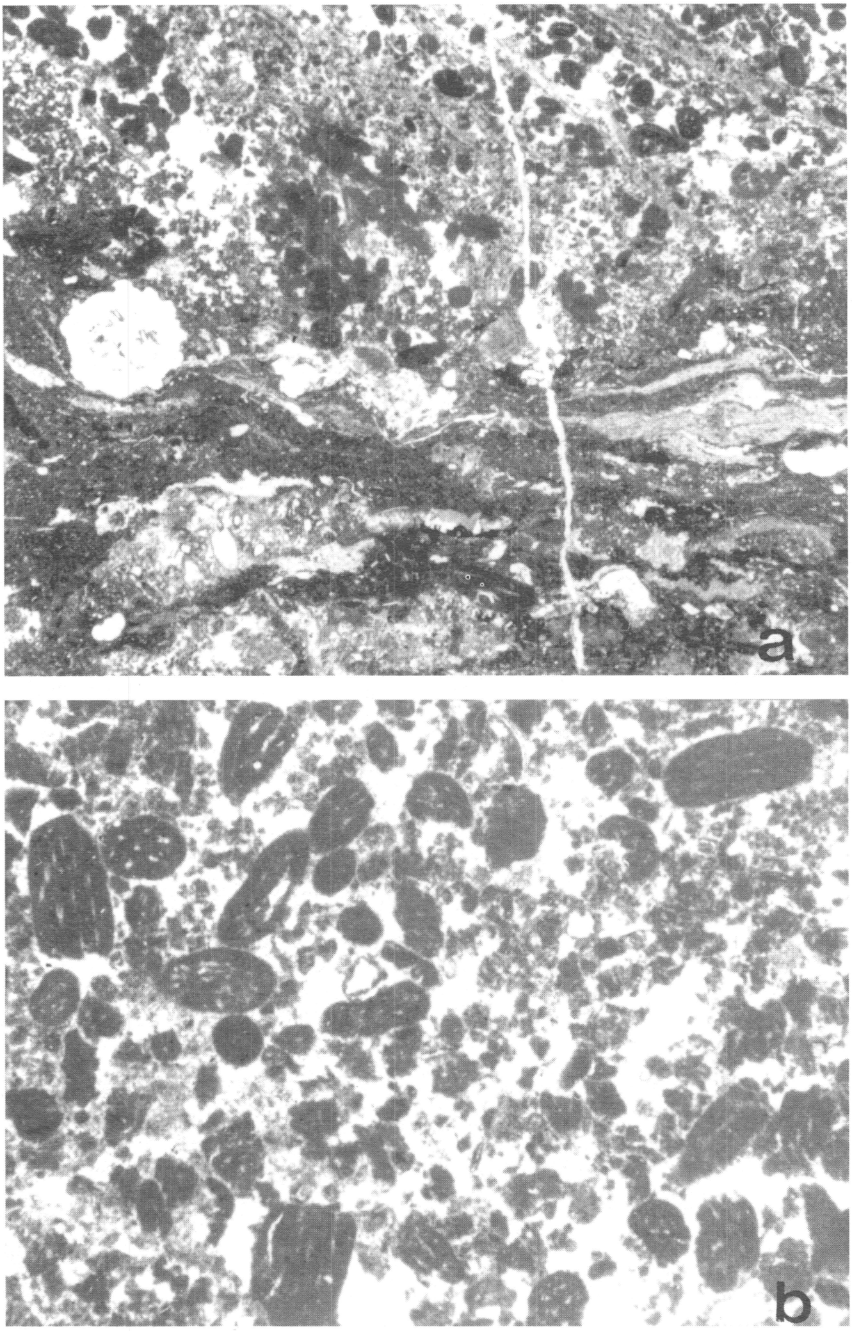

Fig. 9 - a) Broken lamination (lower part of the photo) probably by bioturbation. In the upper part of the photo, abundant crustacean fecal pellets are visible; the white area on the left is a sparry charophyte gyrogonite. b) Detail of the thin section of the photo *a*; the crustacean fecal pellets are visible in detail (cfr. *Favreina* sp.). Thin section: VES.2P, about 19x (Fig. 9a), about 38x (Fig. 9b). Age: Upper Cretaceous (Campanian-Maastrichtian). Horizon and locality: Vesole Mount, Plattenkalk with decapod crustaceans (subinterval *g5*).