

## CYPRUS EVAPORITES

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The Island of Cyprus is divisible into three major stratigraphic and tectonic zones.

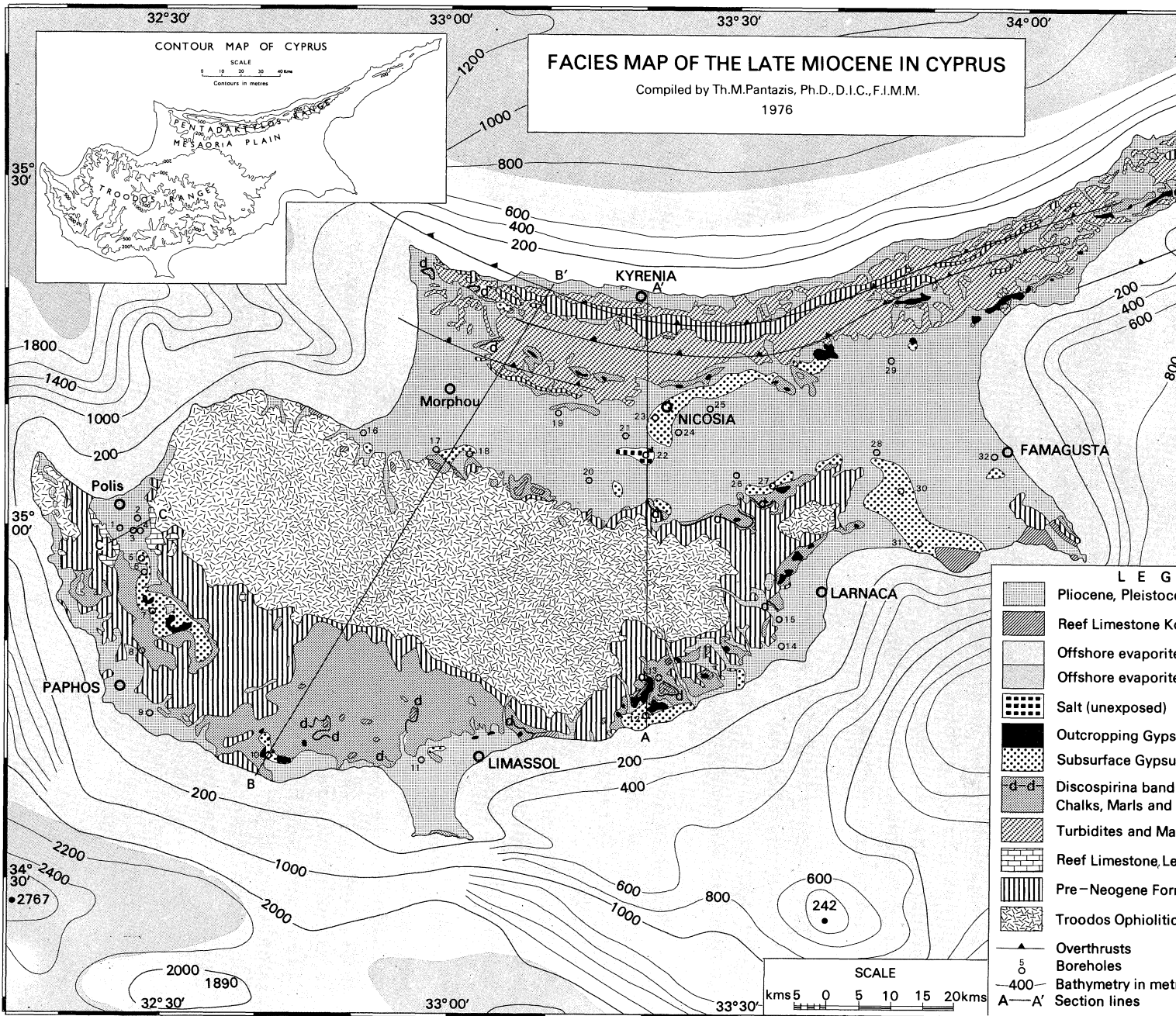
The Troodos zone at the south, consists of an igneous massif which occupies the core of the mountain range and gently dipping sediments which are peripheral to the massif.

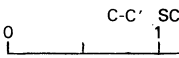
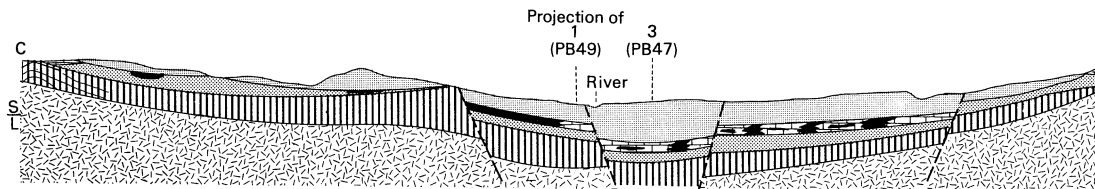
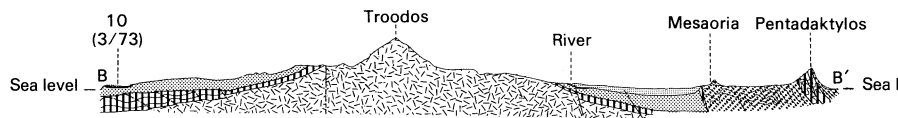
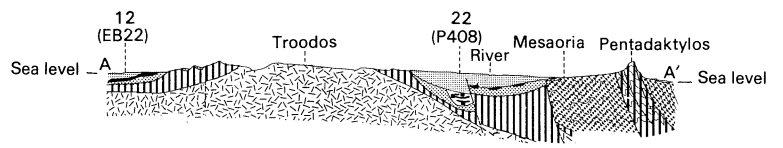
The Pentadaktylos (Kyrenia) zone, at the north, in contrast to the Troodos massif, is the most strongly folded and thrust zone and composes almost wholly of sedimentary rocks. The central core of Pentadaktylos, (Kyrenia) range consists of crystallised and semicrystallised limestones and dolomites overthrust on younger chalky sediments and turbidites.

The Mesaoria plain, separating the two other zones, is a subsided area most probably of continuous sedimentation from Campanian to Upper Miocene. Deep drilling showed that at the base of this succession, at least in its southern part, there are Troodos pillow lavas.

The Miocene sedimentation of the Troodos zone is composed of marls and chalks of Middle Miocene age with important calcarenite layers, fragmental limestones and paper shales (Pakhna formation). The end of the Pakhna cycle includes bioclastic algal limestones and reef limestones (Koronia formation) which grade upwards and laterally into evaporites mainly consisting of gypsum (Kalavastos formation). Salt has been so far found only in the north part of this zone under Pliocene sediments.

The Lowest part of Pakhna succession is composed of a rhythmic sequence of yellow to buff marls and marly chalks or limestones overlying unconformably the Lefkara chalks and the Terra limestone. The unconformity, however is not apparent in certain areas where sedimentation of Lefkara Group rocks continued into the Lower Miocene. The top of this unit is marked by a prominent stratigraphical zone up to 5 metres thick consisting of bright white porcellaneous siliceous chalks of a characteristic conchoidal fracture which include the gigantic foraminifer Discospirina italica (Costa) interbedded with shaly limestone.





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Drawn by Geologic

FIG. 2 Diagrammatic Geological Sections A-A', B-B' and C-C'  
For legend see figure 1

The chalk-marl sequence shows both vertically and laterally, but most typically vertically (upwards) a facies variation into massive calcarenites or fragmental shaly limestones.

Overlying conformably the Pakhna formation are hard compact, bioclastic bioherm and biostrom reef limestones of the Koronia formation which mark the end of the calcareous sedimentary cycle of Middle Miocene. This formation is also transgressive and overlies in places older formations including igneous rocks. These reef limestones grade upwards and laterally into evaporites consisting of gypsum deposits of the Kalavastos formation, forming thick deposits of considerable extent.

The gypsum forms three main varieties, the usual type of gypsum medium to coarse grained (seccharoidal type), the selenite forming translucent bladed folia or rosettes and the marmara type which is a compact medium-grained gypsum splitting into thin flags used by villagers for interior floor tiles.

The Middle Miocene sedimentation in the Mesaoria and Pentadaktylos (Kyrenia) zones is mainly represented by a thick succession of deposits (exceeding 3000 m. in thickness) of the Kythrea formation which are strongly folded. The Kythrea flysch consists of thin-bedded arenaceous material (turbidites, greywackes etc...) interbedded in places with marls and thin-bedded calcarenitic limestones. At the base of this flysch there are in places basal conglomerates.

Overlying the Kythrea turbidites are rather restricted outcrops of pale grey and brown marls of the Pakhna formation capped in some areas by hard porcellaneous chalks interbedded with papery shales of the Discospirina zone which are similar to the circum Troodos Discospirina band.

Numerous gypsum outcrop within the arcuate belt of Mesaoria zone and the southern periphery of Pentadactylos (Kyrenia) range extending from the most western part to the most eastern part of Cyprus are correlateable both lithologically and stratigraphically to the circum Troodos evaporites.

In the Northern zone of the Pentadactylos (Kyrenia) zone the Miocene stratigraphy is similar to the southern part of the same zone but no gypsum was found outcropping in this area.

Post Pakhna sedimentation in all three zones consists of Lower Pliocene grey and yellowish brown marls, chalky marls, limestones and calcarenites (Nicosia formation) overlain by Pleistocene sediments.

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