# NEOGENE

OF THE

# MEDITERRANEAN TETHYS AND PARATETHYS

STRATIGRAPHIC CORRELATION TABLES

AND

SEDIMENT DISTRIBUTION MAPS


No.25

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faults. Fluviatil and terrestrial sediments are locally developed over the Pliocene landscape.

References:
1. BRUNN 1956 2. DESPRAIRIES 1979 3. GEORGIADES-DIKEOULIA & al. 1977 4. PAPANIKOLAOU & SIDERIS 1977 5. SOLIMAN & ZYGOJANNIS 1977.

## Area No. 39: THESSALONIKI – CHALKIDIKI MARGINAL BASIN, GR
Author: M. DERMITZAKIS

The cycle starts with the Upper Lutetian and ends with the Lower Oligocene Deposition of melasse type sediments prevail. Deformation is even less pronounced than in the former cycles. Upthrusting occurs at the margins of the Serbo–Macedonian Massif.

The Neogene–Quaternary cycle begins with the subsidence of basin regions without relations to the former orogenic structural pattern. The continental fluviatile and lacustrine sedimentation in these basins only in places is interrupted by brackish or marin ingressions.

References:
1. ARAMBOURG & PIVETEAU 1929 2. FREYBERG VON 1955 3. SONDAAR 1968 4. SAKELLARIOU & SYMEONIDIS 1970 5. KOCKE & MOLLAT 1977.

## Area No. 40: STRIMON BASIN, GR
Authors: M. DERMITZAKIS & E. LEKKAS

The lower part of the Neogene sequence is composed of non-marine, fluviatile and lacustrine clastic sediments ("Basalschichten" of GRAMANN and KOCKEL, 1969, Lefkon Formation + Ano Metochi Formation of ARMOUR-BROWN et al., 1979) throughout the Strimon Basin. According to the latter authors the fluvio-lacustrine successions reflect the sedimentary expression of block-faulting along SW–NE trending faults. Coarse granite breccias intercalated in the uppermost part suggest mass transport triggered by movements along fault escarpments bordering the basin in the Serrai area at the time.

Micromammals recovered from the lower part of the Lefkon Formation near Serrai indicate a Vallesian Age (MN 10/11) while those from the upper part of the Lefkon suggest a Late Turolian Age (MN 13/14), sporomorphs belong to the Kizilhisar association. These data suggest that the Lefkon Formation is of Late Miocene age.

The upper part of the unit contains fresh-water limestones with a maximum thickness for individual bodies of some tens of metres, lacustrine clayey beds with micromammals suggesting a Late Turolian Age and brackish sediments with ostracodes indicative of the Pontian. The evaporites reflect the sedimentary expression of the Messinian salinity crisis; in off-shore drillings near the island of Tasos the evaporite sequence has a thickness of about 700 metres, including some 400 metres of salt (LALECHOS and SAVOYAT, 1979).

The evaporite-travertine-clay units is in exposures along the Orphanian Gulf conformably onerlain by a clastic sequence, consisting in its basal part of open marine, partly laminated sandy or silty clays with nannoplankton associations indicative of the lowermost Pliocene *Ceratolithus acutus* Zone. Upwards, the number of conglomeratic interbeds increases rapidly and the upper part of the sequence shows irregular alterations of conglomerates, sands and clays deposited in a coastral area with an intricate pattern of lacustrine, fluviatile and marine environments.

References:
1. ARMOUR-BROWN & al. 1979 2. GRAMANN & KOCKEL 1969 3. LALECHOS & SAVOYAT 1979 4. OPPENHEIM 1920 5. PAPP 1948 6. SAKELLARIOU-MANE 1966.

## Area No. 41: THRACIAN MARGINAL BASIN, GR
Author: M. DERMITZAKIS

The Tertiary sediments of Thracian marginal basin appear at the Northeastern part of the basin at the east side of Rhodope area. They form the west extension of the tertiary basin Ergene.

The sediments are divided in three formations
a) Marls, partly toffitic and sandstones and conglomerates
b) Marls and sandstones. At the upper part of the formation there are banks of Nummulitic limestones.
c) Sequences of conglomerates and sandstones that change laterally in marly layers.

The south part of the basin includes the areas of Alexandroupolis, Ferres and Provatona and the north part the areas of Soufli, Didymoticho and Andrianoupolis. At the south part the sedimentary sequence starts with Middle Eocene to Pliocene–Pleistocene. The sediments of the northern part represented the ages of Roupelian, Tortonian and Pontian.

References:
1. KOPP 1965 2. LÜTTIG & THENIUS 1961 3. MITZOPOULOS 1961 4. MITZOPOULOS & TRIKKALINOS 1937.

## Area No. 42 a: SW AKARNANIA MARGINAL BASIN, GR
Author: M. DERMITZAKIS

At the lower Aquitanian in the basin of SW Akarnania starts a tectonic phase which gives at the central district of the basin that belongs at the Ionian zone, a new form.

The outer part of the Ionian zone (except its outer margin) it is not influenced by this tectonic phase. During Aquitanian at the outer Ionian zone we have the upper flysch. At the eastern part the basal flysch belongs to the lower Aquitanian. At the western part is younger and is placed at the *G. dissimilis* zone.

The end of the flysch sedimentation at the western part of the basin is younger than that of the central part of the basin.

At the same time we have at the Pre-apulian and Apulian zones the neritic calcitic sedimentation with small thickness. Deposits. During Burdigalian at the western part of the basin we have calcite-sandstone deposits and at the eastern parts we have sediment of littoral phase.

After Burdigalian we have clastic deposits in accordan-

ce until Pliocene. The inner Ionian zone is filled with mollasic sediments.

Reference:
IFP & IGM 1966.

### Area No. 42 b: PYRGOS, GR
Author: J. E. MEULENKAMP

In surface outcrops the Middle Pleistocene–Pleistocene sequence unconformably overlies Mesozoic–Paleogene rocks. The Late Cenozoic sequence starts with lacustrine, locally brackish sediments, which are succeeded upwards by marine clays, silty clays, siltstones and sands. The latter were deposited in near-shore to lagoonal environments.

At a few spots clays, lignites and sands are exposed which are probably of Early Miocene age. Middle Miocene sediments were encountered in a drilling performed near Sosti.

References:
1. HAGEMAN 1977 2. HAGEMAN 1979.

### Area No. 42 c: S PELOPONNESIAN MARGINAL BASIN, GR
Authors: M. DERMITZAKIS & E. LEKKAS

The neogene formations of the basin consist mainly of marls and marly sandstone with sandstone intercalations which in various locations become calcite–sandstone.

Also conglomerates of limited thickness increases from the center to the edges of the basin.

References:
1. SYMEONIDIS & ANAPLIOTIS 1969 2. ALEXOULIS-LIVADITIS 1972.

### Area No. 42 d: KYTHIRA, GR
Author: J. E. MEULENKAMP

Late Miocene (Tortonian) fluviolacustrine, brackish and shallow marine conglomerates, sands and clays with locally lignite intercalations were deposited on the Mesozoic–Paleogene basement. The Upper Miocene clastics are unconformably overlain by marls and bioclastic limestones of late Early–Late Pliocene age. Tilting and erosion of part of the Upper Miocene (Tortonian) sequence occurred in the Messinian–late Early Pliocene time-span.

References:
1. FREYBERG 1967 2. CHRISTODOULOU 1966 3. THEODOROPOULOS 1973 4. MEULENKAMP & al. 1978.

### Area No. 43: MEGALONOLIS (PELOPONNISOS) INTERMONTANE BASIN, GR
Authors: M. DERMITZAKIS & E. LEKKAS

The Neogene of the basin fo Megalopolis filling of the basin comprizes limnic and fluviatile sediments. The sequence commences with the Upper Pliocene limnic Makrision Stage, consisting of marls with intercalated lignite seams of small thickness. The predominantly fluviatile sediments of the Trilofon Stage belong to the Upper Pliocene as well.

References:
1. LUTTIQ & MARINOS 1962 2. VINKEN 1965.

### Area No. 44: ATTIKA–EUBOEA–LAMIA, GR
Authors: M. DERMITZAKIS & D. PAPANIKOLAOU

Deposition of continental Miocene pre-Pikermian age, molasse of Raphina. They consist of travertines clays, gray marls, sometimes with fossiliferous lignites (Planorbis etc.) yellow sandstones and conglomerates with rounded pebbles overlay unconformably the Mesozoic deposits. They follow unconformably the yellowish and red colour loams of Pikermi, with the fossiliferous beds of Pikermian fauna. With the low angular discordance exposed marine fossiliferous sands, conglomerates, travertine limestones of Pliocene age.

References:
1. CHRISTODOULOU 1961 2. CHARALAMBAKIS 1952 3. GUERNET & SAUVAGE 1969 4. MITZOPOULOS 1948 5. PAPP & al. 1979 6. SYMEONIDIS & al. 1979.

### Area No. 45 a: NORTHERN SPORADES (SKYROS), GR
Authors: M. DERMITZAKIS & D. PAPANIKOLAOU

The Neogene deposits are overlay in discordance with fossiliferous formations from marls, sandstones, conglomerates, and clays. In these deposits mollusc associations have described as also diatoms.

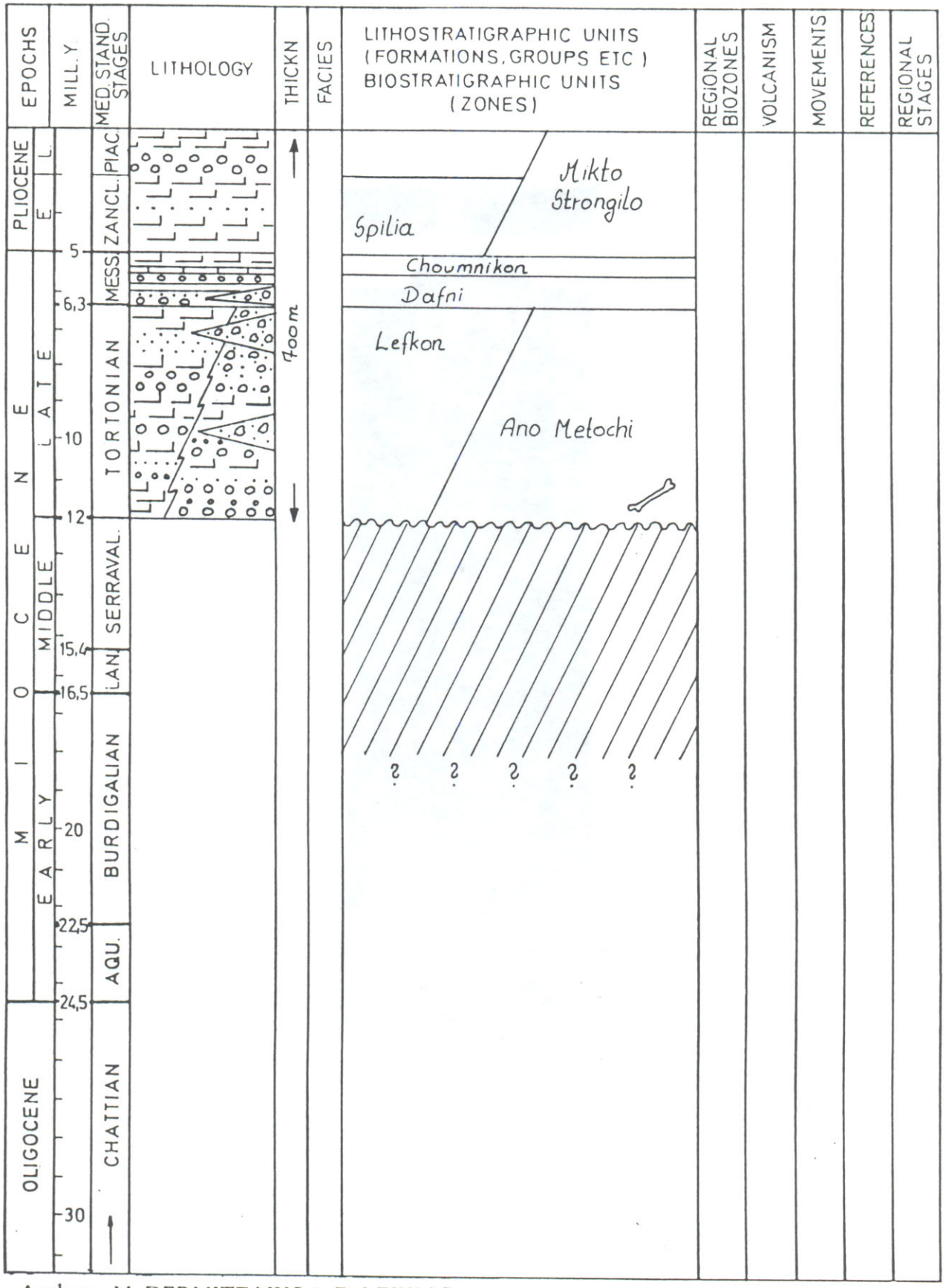
References:
1. GUERNET 1971 2. MELENTIS 1973.

### Area No. 45 b: MILOS, GR
Author: J. E. MEULENKAMP

The (Late Tortonian?) – Messinian sequence is transgressive on the metamorphic basement. The lower part of the sequence consists of coral–pelecypod limestones with intercalations of reddish conglomerates; the upper part displays lacustrine–brackish–lagoonal conglomerates, limestones and clays with some gypsum lenses. The Upper Miocene sequence is overlain by open marine clays of Early Pliocene age, which pass upwards into marine marls with volcanic interbeds. The latter type of sediment succession probably continued until the Pleistocene. The Pleistocene is characterized by sandy marls, diatomites and thick successions of volcanic rocks.

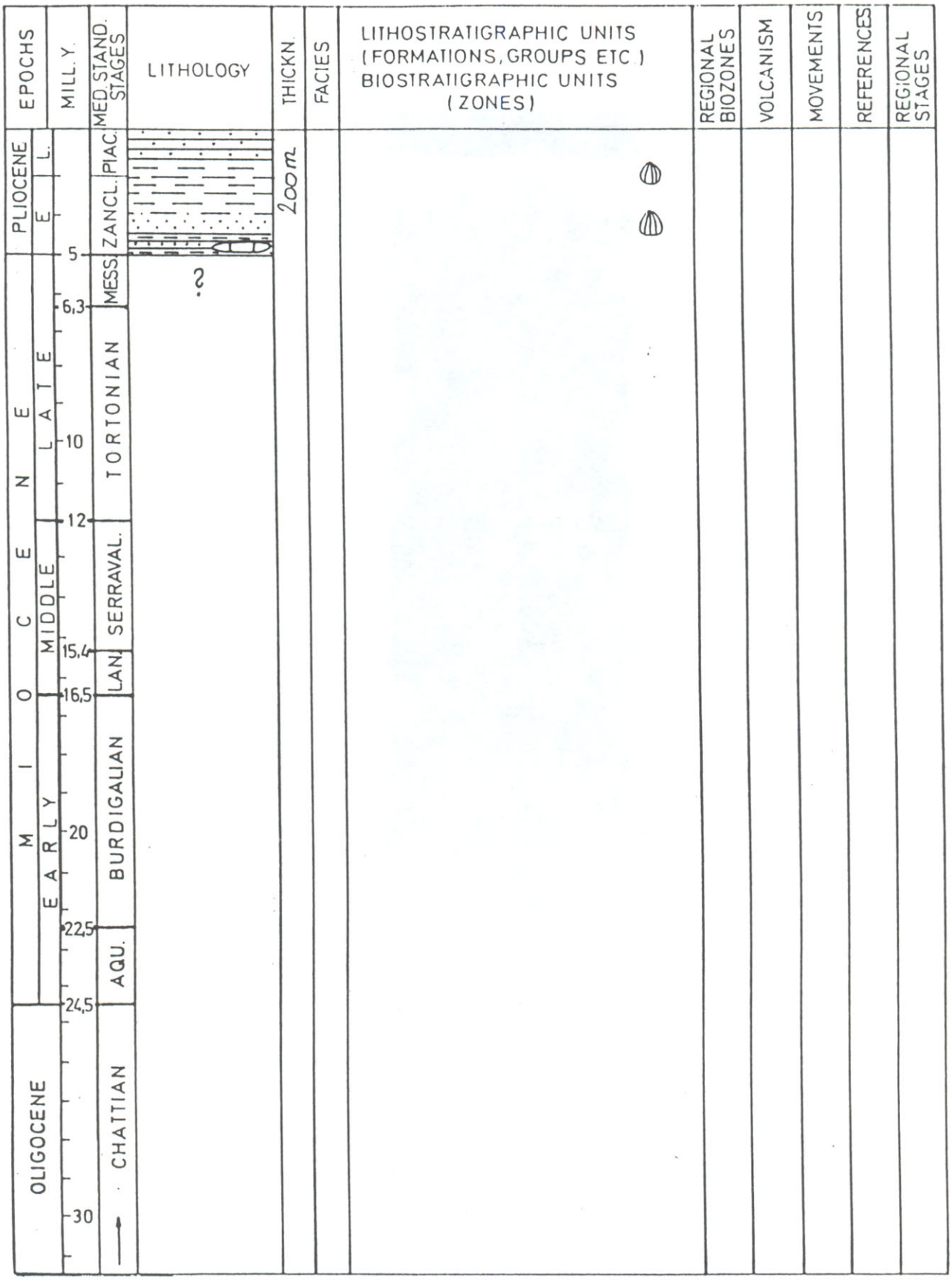
The Neogene of the island of Milos is not representative for the Cyclades area. For instance, marine Upper Oligocene–Lower Miocene sediments have been reported from the islands of Naxos and Paros. Late Neogene sedi-

## Area No. 40: STRIMON BASIN, GR




Authors: M. DERMITZAKIS & E. LEKKAS

Area No. 42 c: S PELOPONNESIAN MARGINAL BASIN, GR

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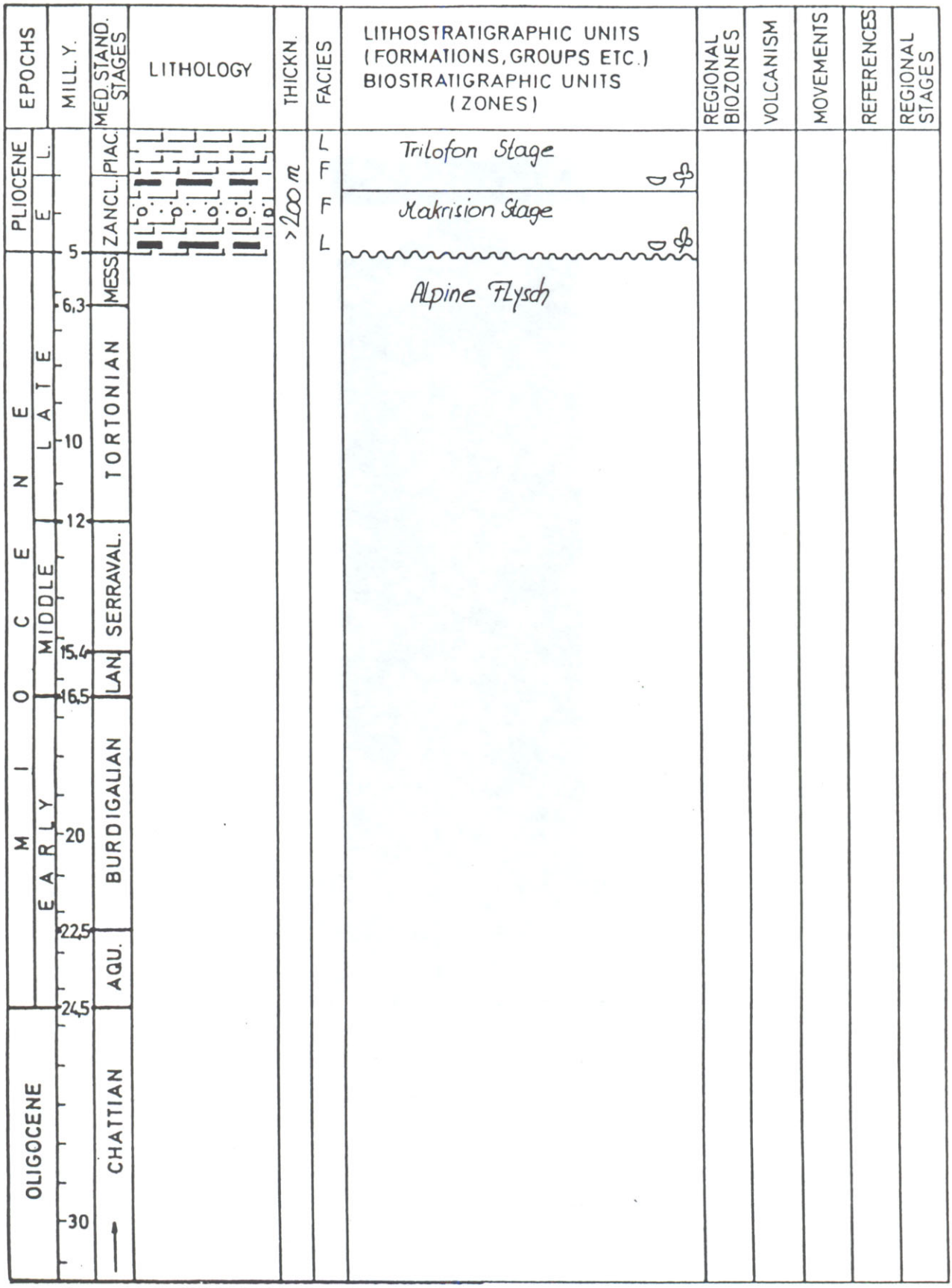
# Area No. 43: MEGALONOLIS (PELOPONNISOS) INTERMONTANE BASIN, GR

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