

μων, τὸ ποσοστὸν τῶν ὁποίων ἀνέρχεται εἰς 35%, ὡς καὶ ἐκ γάμων μεταξὺ ὁμοζυγωτῶν τὸ ποσοστὸν τῶν ὁποίων ἀνέρχεται εἰς 100%. Ταῦτα ἀφορῶσι εἰς τὸν καθολικὸν ἀλφισμόν. Ὅσον ἀφορᾷ ὅμως εἰς τὸν μερικὸν ἢ ἀτελῆ ἀλφισμόν τοῦ ὀφθαλμοῦ οὗτος δὲν κληροδοτεῖται ὡς καὶ ὁ καθολικός. Οὕτω κατὰ τὸν *van Duyse*, ὅταν ὁ εἰς τῶν ὀφθαλμῶν εἶναι ἀλφός, ἐλλείπει δὲ καὶ ἡ ὠχρὰ κηλὶς, ἢ ἀνωμαλία αὐτῆ κληροδοτεῖται ὡς ἐπικρατῶν χαρακτήρ. Ὅταν ὁ βυθὸς τοῦ ἐνὸς ὀφθαλμοῦ εἶναι ἄχρους, ὑφίσταται δὲ συγχρόνως ἀπλαστία τῆς ὠχρᾶς κηλίδος καὶ ὑψηλὴ μυωπία, ἢ πάθησις μεταδιβάξεται ὡς χαρακτήρ συνδεδεμένος μετὰ τοῦ φύλου. Ὅταν τέλος ὑπάρχη μόνον ἀπλαστία τῆς ὠχρᾶς κηλίδος, ἄνευ ἀνωμαλίας τῆς χρωστικῆς, ἐνῶ συνυπάρχει μερικὴ περιεκτικότης μελαγχρωστικῆς εἰς τὰς τρίχας τῆς κεφαλῆς καὶ τοῦ δέρματος, ἢ κληρονομικότης ἐμφανίζεται κατὰ πᾶσαν πιθανότητα κατὰ ὑπολειπόμενον ἢ λανθάνοντα τρόπον.

Τὰ ἀνωτέρω ἀφορῶσι εἰς τὸν ἀλφισμόν τοῦ ἀνθρώπου, εἰς τὰ ζῶα ὅμως ἡ διασταύρωσις ἀλφῶν παράγει σταθερῶς ἀλφὰ ἕτομα.

Δυστυχῶς παρ' ἡμῖν ἔνεκα ἀνακριθῶν πληροφοριῶν ἢ καὶ ἐξ ἀγνοίας, ὅσον ἀφορᾷ εἰς τὴν ὑπαρξίν συγγενῶν ἀνωμαλιῶν εἰς τοὺς συγγενεῖς τῶν πασχόντων, ὄχι μόνον διὰ τὸν ἀλφισμόν, ἀλλὰ καὶ διὰ τὸν δαλτωνισμόν, ἡμεραλωπίαν κτλ. δὲν δύναμεθα νὰ ἔχωμεν ἀκριθεῖ γενεαλογικὰ δένδρα.

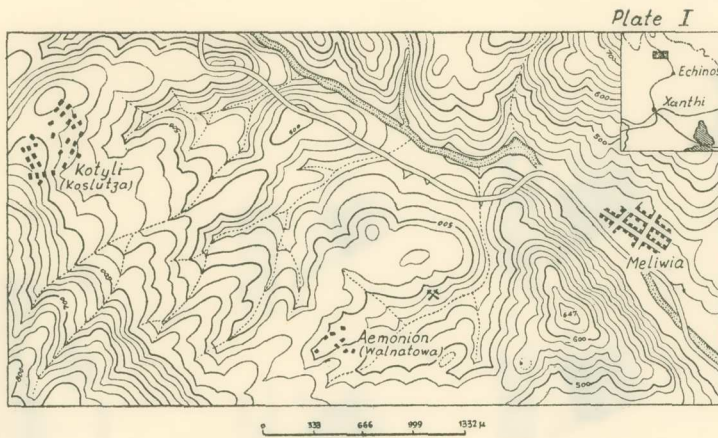
ΓΕΩΛΟΓΙΑ. — Preliminary discussion upon the age of the Aemonion - Kotyli coal beds, ὑπὸ Ἰ. Τρικκαλινού*.

The Aemonion - Kotyli area lies 42 km North of Xanthi on the right of the valley which runs from Xanthi to the Helleno - Bulgarian frontier (s. Plate I).

Schulze (8, p. 394) first, in 1933, reported the presence of «lignite» deposits in the area and pointed out the absence of any mining in connection with those deposits. Later, in 1939 mining activity started near Aemonion (Balkanova). Charitakis (10) gives the first account on this activity in a special report following a visit in the area. The mining rights over this area are own by Patrikalakis - Tzedakis Company.

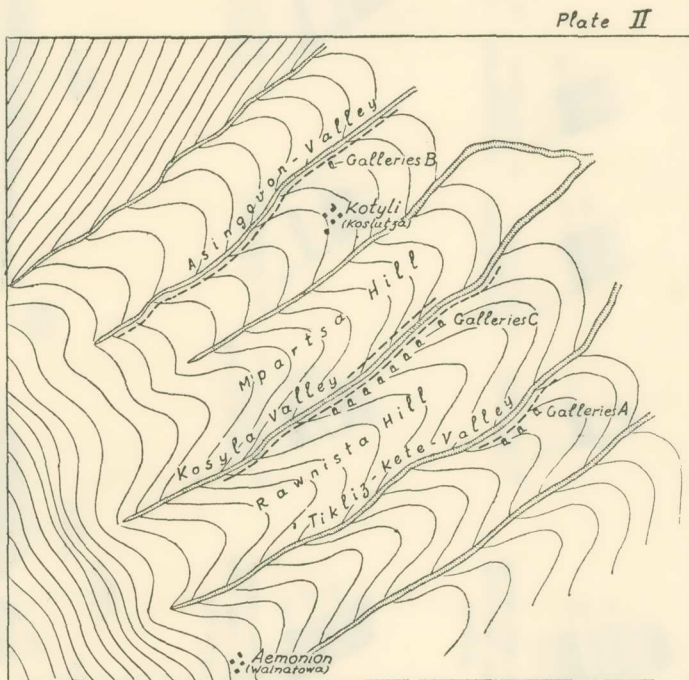
The coal bearing sediments occupy a basin surrounded by high mountains (s. Plate I) of cristalline schists and are crossed by numerous valleys of a NE direction. Outcrops of the coal beds are encountered along the deep valleys of Tikliz keté, Kosyla and Asingovon (s. Plate II). Upon these out-

* **ΙΩ. ΤΡΙΚΚΑΛΙΝΟΥ**, Πρόδρομος μελέτη περὶ τῶν λιθανθρακοφόρων ἀποθέσεων τῆς περιοχῆς Αἰμονίου - Κοτύλης.



Contour Map of Aemonion-Kotyli Area

cross exploration work was carried out by the Morisson Cy and later by the present owner. Although this exploration is restricted, afford, however, va-

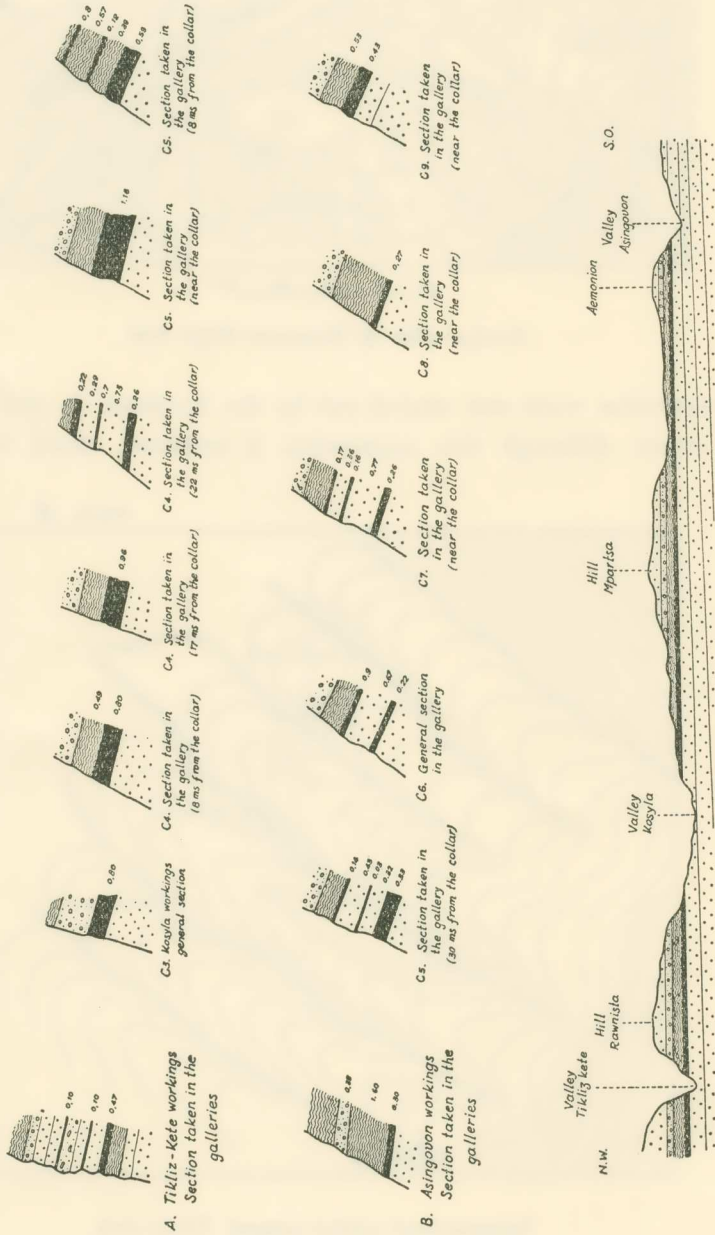


*Topographical sketch around Tikliz-Kete,
Kosyla and Asingovon valleys*

Stratigraphical section of the coal bearing horizon of Aemontion-Kotylit

Plate III

Kosyla workings



luable information on the coal deposits. The writer studied the area, in 1940, during the war. The vicinity of the Bulgarian border and the unsettled conditions prevailing in those days, made impossible a thorough geological investigation of the whole basin. The following account is mainly based on observations gathered around and within the mine workings; it deals especially with the geological conditions of the coal deposits and their importance.

1) The Aemonion - Kotyli basin is made up of a series of sediments lying in unconformity upon the crystalline schists of Rhodopi. Said sediments differ from the usual ligniferous tertiary deposits of Macedonia and Thracea; Dissected by deep valleys are well exposed and afford an easy field for investigation. Along the valleys of Tikliz - Keté, Kosyla and Asingovon (s. plate II) the lower horizon of the sedimentary series is well exposed. This horizon consists of compact sandstones which are also met in the vicinity of the Aemonion village. It is made up of successive beds of a brown yellow colour developing locally into the red; the thickness of this horizon oscillates between 30 and 40 ms. Some inclusions of carbonized matter, under the form of thin lenses of coal, are observed (s. Figure 1).

2) Above beds are followed by a definite coal bearing system made up of successive coal beds, the thickness of which varies between 0,03 and 1,16 ms. The stratigraphic sections of the plate III and Fig 1 give the precise picture and the particulars of this system.

3) The coal bearing system is overlaid by a bed of brown schists 0,40 to 1,60 ms. thick.

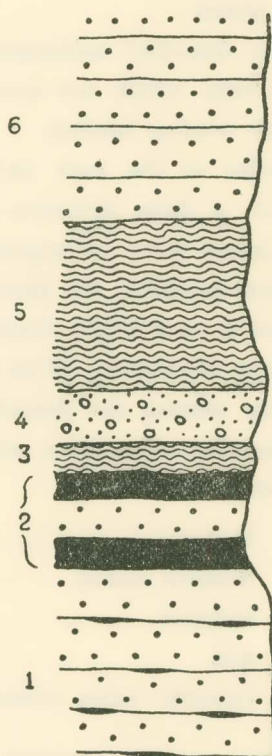


Fig. 1. Stratigraphical section of the coal bearing horizon of Aemonion-Kotyli

4) A bed of Grauwacke 1,0 to 2,0^{ms} thick covers the above schists; this bed is made up of gravels of compact brown sandstone cemented by siliceous matter.

5) The Grauwacke bed is in turn overlaid by a new horizon of dark schists of a thickness oscillating between 5 and 10 ms; these rocks usually split in thin plates.

6) Above described sediments are finally terminated by a new system of sandstone beds which are much alike those of the bottom of the series below the coal bearing horizon.

The strike of the beds oscillates from NW to NE with dip varying from 5° to 20°. A dome structure accounts for this strike oscillation. As far as one can judge from underground observations within the opened galleries only minor accidents are likely superposed to the dome structure.

The coal is of a bright black colour, is compact with conchoidal break, and resistant to weathering. With caustic potash it does not give the usual lignite reaction causing the characteristic change in colour.

The chemical composition according to the Pasteur's Laboratory of Salonica runs as follows:

Water	1,13 %
Volatile matter	23,89 %
Sulphur	3,00 %
Ash	29,96 %
Calorific value (Calories per kilo)	6,200 - 6,500

Both forementioned physical and chemical properties lead to the conclusion that the deposits under review are not of the usual lignite type; they must be classed as real coal.

The age of the coal bearing deposits of the Aemonion - Kotyli area.

In Eastern Macedonia several lignite occurrences of pliocæn age are known. Older lignite formations belonging to the Eocene age (Lutetian) exist in West Thracia as those of the Potamos of Alexandropolis etc.

According to Charitakis (10, p. 2-3) the coal bearing system of Aemonion - Kotyli area is of Eocene age; orogenic pressures and magmatic action account for the quality of the coal.

Further on the Boncev's (2) geological map of the Balkan peninsula

no mesozoic or paleozoic formations are reported. According to Osswald (7, p. 75) all the stratigraphic series between Algonkian and Neogene is not met in the area. Kossmat (5, p. 192) points out the complete absence of the carboniferous formations in Macedonia.

The comparative examination of the tertiary formations and those of the Aemonion - Kotylis brings out the following facts: a) The usual tertiary rocks which mostly are made up of either plastic clays or marls do not occur here; The Aemonion - Kotyli formations consist of sandstones, schists, and grauwackes. b) From the forementioned chemical composition comes out that the deposits of this area must be classed as coal and not as lignite. Mention of this statement is made by S. Catrakis (p. 12)¹ following a verbal communication by the author. This quality has been explained by Charitakis (10, p. 2-3) as a result of orogenic pressures and magnetic action. But the composition of the sedimentary beds is in disagreement with such a point of view. Nowhere phenomena either dynamic or thermal metamorphism have been observed so far, in the section of mining workings.

Foregoing discussion brings out that the Aemonion - Kotyli sediments and the included coal beds should be considered as older than the tertiary lignite deposits. It remains to determine their age. As already stated the area under review lies close to the greek - bulgarian border. Boncev (1) reports the presence in Bulgaria of Breccia, conglomerates and sandstones beds including irregular seams of coal (1. p. 33), he considers above beds of liassic age. Fossils are scarce as is the case in the Aemonion - Kotyli sediments. According to the same author beds of coal do also occur within sediments of turonian age. De Launay (6, p. 55) also reports the presence of coal beds included in the Cretaceous formations of Bulgaria. Based on foregoing analytical discussion we are inclined to consider the Aemonion - Kotyli coal bearing deposits as belonging to Mesozoic till discovery of fossils will allow a more accurate determination of their age.

¹ Στ. Κατράκη, 'Απόψεις επί του λιγνιτικού προβλήματος της χώρας. 6 Μελέται οικονομικοτεχνικαί ἀνασυγκροτήσεως καί αξιοποιήσεως τῆς Ἑλλάδος. Ἀθήναι 1947, Σελ. 1-29. (St. D. Katrakis, Les problème des lignites grecs).

Π Ε Ρ Ι Λ Η Ψ Ι Σ

Ὁ συγγραφεὺς εἰς τὴν ἀνωτέρω πρόδρομον μελέτην του πραγματεύεται τὰς λιθανθρακοφόρους ἀποθέσεις τῆς περιοχῆς Αἰμονίου - Κοτύλης (Περιοχῆς βορείως τῆς πόλεως Ξάνθης) καὶ καταδεικνύει ἐπὶ τῇ βάσει τῶν διαφορῶν κοιτασματολογικῶν τομῶν τὴν σύνθεσιν τοῦ ἐνταῦθα παρουσιαζομένου λιθανθρακοφόρου ὀρίζοντος. Συγκριτικὴ δὲ ἐξέτασις τῶν στρωμάτων τῆς περιοχῆς Αἰμονίου - Κοτύλης πρὸς τὰ λιγνιτοφόρα στρώματα τῆς περιοχῆς Μακεδονίας - Δυτ. Θράκης ὡς καὶ αἱ ἐκτελεσθεῖσαι χημικαὶ ἀναλύσεις ἐπιτρέπουν εἰς τὸν συγγραφέα τῆς ἀνωτέρω μελέτης τὴν ἐκδοχὴν ὅτι εἰς τὴν προκειμένην περίπτωσιν δὲν πρόκειται περὶ λιγνιτοφόρων στρωμάτων ἀλλὰ περὶ ἀρχαιοτέρων λιθανθρακοφόρων τοιούτων, ἐνδεχομένως μεσοζωϊκῆς ἡλικίας. Ἡ ἀκριβὴς ἡλικία τοῦ λιθανθρακοφόρου ὀρίζοντος τοῦ Αἰμονίου - Κοτύλης θέλει ἐπακριβῶς καθορισθῆ μετὰ τὴν ἐκτέλεσιν εὐρύτερων γεωλογικῶν καὶ κοιτασματολογικῶν ἐρευνῶν εἰς τὴν ἀνωτέρω περιοχὴν.

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Β. Βλασοπούλου καὶ Μ. Λογοθέτη, «Θεραπευτικὴ ἰκανότης νέου φαρμακευτικοῦ σκευάσματος».

* Ἐδημοσιεύθη εἰς τὴν σειρὰν τῶν Πραγματειῶν τῆς Ἀκαδημίας Ἀθηνῶν. τόμ. 17 (1951), ἀριθ. 1.