

ABSTRACTS OF THE PAPERS PUBLISHED ONLY IN THE TURKISH EDITION OF THIS BULLETIN

ORIGIN OF THE CONCRETIONARY LIMESTONES IN THE ISTANBUL DEVONIAN SUCCESSION

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ABSTRACT. - Nodular limestone occurrences are widely present in the Devonian - aged sediments of the İstanbul region. This nodular units have been developed in the blue-grey coloured micritic limestones and marls alternation. The occurrences seen in the Lower-Middle Devonian strata are larger and the ones observed in the Upper Devonian sediments are smaller. The laboratory and field findings indicate that the nodules were developed within the limestone-marl intercalation in which the thickness of the individual beds varies from 2-3 mm. to 5-6 cm. during the early diagenesis compaction, and loading and, later, by means of pressure-solution effects and, in part by tectonic deformation. No effects of organic activities and transportation have been detected. The size, shape and the order of the nodules are found depending on the thickness ratio of the individual beds in the limestone-marls intercalations.

ROCK AND CLAY MINERALOGY OF THE UPPER CRETACEOUS-TERTIARY SEDIMENTARY SEQUENCE AROUND BURDURLAKE

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ABSTRACT. - Rocks and clay mineralogy of the Upper Cretaceous marine and Neogene shallow water units around Burdur lake have been studied. Characteristic minerals of the Upper Cretaceous are dolomite and corrensite, Paleocene-Lower Eocene is smectite, Neogene are aragonite, analcime and smectite. Calcite, quartz, feldspar, illite and chlorite are commonly found in all these units. It has been shown that rock units of different age and environment differ from one another in respect to their rock and clay mineralogy. Rock and clay mineralogy of the units have been studied and their mode of occurrence discussed.

MINERALOGIES OF THE METEORITES FALLEN IN TURKEY

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ABSTRACT. - In this study mineral compositions, textures, structures and their relationships with one another of three meteorites which have fallen in various parts of Turkey have been examined. The Şeyhhalil meteorite, being the one of these, displays similar mineral paragenesis, textures and composition with those of the Bursa meteorite. Minerals which occur in both of these meteorites have been differentiated as silicate and ore minerals. Silicate minerals that common in both are orthopyroxene, olivine, plagioclase, serpentine, talc, seriate and clay. Ore minerals, in addition, are kamacite, troilite, chromite, taenite, native copper, ilmenite, mackinawite, and limonite. Trace and very small amounts of rutile, chalcopyrrhotine, whitlockite and apatite are also observed in spongy-like Şeyhhalil meteorite. According to their mineralogical compositions, both of the meteorites might be considered within the "siderolite" class. Ağrı meteorite, on the other hand, might be included within the "octahedral" class and is composed mainly of very scarce amount of troilite; besides, kamacite, taenite and plessite of three different iron-nickel minerals.

PETROLOGICAL COMPARISON OF THE UPPER CRETACEOUS - LOWER TERTIARY BASINS OF THE "ANKARA VIRGATION"

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ABSTRACT. - In the present work, the Upper Cretaceous-Lower Tertiary sequence in the zone named as Ankara Virgation, covering Haymana-Polath, Northern Tuz Gölü, and Kırıkkale-Yahşihan regions in SW-NE direction has been studied from the sedimentary - geological point of view, and the sedimentological and sedimentary petrological properties of those three basins have been correlated. It has been determined that detritic sequences in all three basins have similar petrographical properties with the exception of certain micro - mineralogical differences, and that the arenites and other detritic materials in the region have been derived from the magmatic and metamorphic rocks situated roughly in the North and the South. Petrographic study of the elastics carried out on sandstones (Dickinson, 1982) have shown that these rocks had a "recycled orogen provenance", and that the sequences in the region had been deposited during the Upper Cretaceous-Lower Tertiary around an active collision zone of plates in relation with a subduction facies.

SULFUR ISOTOPE STUDY OF KURŞUNLU (ORTAKENT-KOYULHİSAR-SİVAS) VEIN TYPE Pb-Zn-Cu DEPOSITS

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ABSTRACT. - Kurşunlu Pb-Zn-Cu deposits are the typical examples of the vein type deposits which are widely seen all over the southern and western parts of Eastern Black Sea region. They are deposited along the fault zone which cut the Upper Cretaceous, mostly andesitic, partly dacitic volcanic and volcanosedimentary rocks. Galena, sphalerite, pyrite, chalcocopyrite, calcocite and hematite are seen as ore minerals while quartz, calcite and small amount of barite occur as gangue minerals. Isotopic composition ($d^{34}S_{CDT}$) of the galena, sphalerite, pyrite and chalcocopyrite mineral separates from these mineralizations, are as follows; $-6.6 - -8.4 \text{‰}$, $-4.6 - -7.6 \text{‰}$, $-4.3 - -6.0 \text{‰}$ and $-3.7 - -6.3 \text{‰}$. These are the negative values range between -3.7 and -8.4‰ . A possible isotopic equilibrium seems to be developed between sphalerite and galena, and it suggests an average formation temperature of 327°C according to the sulfur isotopes fractionation thermometer. According to these isotopic composition; It is very difficult to identify the source of the sulfur in these ore veins as magmatic, marinal or biologic. But it may be suggested that the sulfur in this composition have been produced as follows; A magmatic sulfur with an isotopic composition nearly zero ($d^{34}S$) which dissolved from the surrounding volcanic and volcanosedimentary rocks by deep circulated suificial water was shared between sulfates (which use heavier isotopes; such as barite) and sulfides (which use lighter isotopes) of the veins as parallel to the isotopic fractionation trend.

QUANTITATIVE TOTAL IRON ANALYSIS USING XRD-FLUORESCENCE RADIATION INTENSITY

Doğan AYDAL *

ABSTRACT. - Fluorescence radiation is being known as "unwanted incident", while XRD determination, and various methods are in use to solve this secondary radiation. In this study, fluorescence radiation is especially created in order to show the possibility of quantitative analysis with the help of this secondary radiation. Some selected standards, which have different quantity of iron content, were chosen and Cu target was intentionally used during XRD determination, in order to cause fluorescence radiation in different intensity. Finally the positive relation was detected between the total iron content and fluorescence radiation intensity. It takes only 40 seconds to find the quantity of total iron in the analysed sample with the suggested method. In addition, another important result of this study is that the radiation intensity has a direct relation with the total iron content in the sample, regardless of iron combination with other elements.

PALYNOLOGY OF THE BORATE BEARING NEOGENE SEDIMENTS IN BİGADIÇ, KESTELEK, EMET AND KIRKA REGIONS

Erol AKYOL ** and Funda AKGÜN **

ABSTRACT. - The Neogene graben systems of western Anatolia are filled by clastic, carbonate and volcanic material. In some places these continental deposits contain economically potential coal, bituminous shale, uranium, clay and borates. Borate beds in Bigadiç, Kestelek, Emet and Kirka Neogene basins are accompanied by thin layers and lenses of coal and coaly shale which are distinguished by a rich microflora. The microflora of these basins consists of two pollen assemblages "a lower and an upper pollen assemblages". These assemblages enable us to correlate the sedimentary sequences of the basins and to understand the palaeoclimatic and paleogeographic conditions prevailed during the Neogene. The lower pollen assemblage which is Early Serravallian in age are recognized in Çan, Orhaneli, Soma, Selendi, Şahinli. It is indicative of widespread forests during this time. Mammalian fauna studied in Tire and Sarçay is also conclusive of forest environment. The sedimentary sequences which contain coal-bearing sand, clay and calcareous shale were deposited in lakes surrounded by mountains with a dense vegetation. The upper pollen assemblage is Late Tortonian in age. Although it broadly represents a moderate humid climate, a relatively dry and coal environment can be suggested when compared with that of the Early Serravallian time. Widely distributed Late Tortonian mammalian fauna, which is well known in western Anatolia, indicates wide steppes. However, as it is the case in four basins with upper pollen assemblage, the Late Tortonian steppes were studied by savannah parks.

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