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EXPLANATION OF THE DEVELOPMENT OF THE WESTERN PONTİD MOUNTAINS AND ADJACENT BASINS, BASED ON PLATE TECTONIC THEORY, NORTHWESTERN TURKEY

Salih SANER

Turkish Petroleum Co., Ankara

ABSTRACT.— Western Ponddes which were in the form of an extension of Eurasian continent before Late Jurassic have become a shallow shelf with the transgression of the sea during Late Jurassic. With the beginning of the subduction of the oceanic crust belonging to the Northern Tethys beneath the Eurasian continent at the end of Early Cretaceous, a volcanic island-arc was formed in east-west direction and Black Sea was formed inside the depression developed with the thinning of the continental crust. The accretion of the subduction complex and island arc volcanism were most effective during Late Cretaceous. Noncontructed type of continental margin arc-trench system was transformed into a detached type of intraoceanic arc-trench system with the oceanization of the bottom of the Black Sea. While the Black Sea was a marginal back-arc basin, forearc basins were formed at the south of the island arc.

A non-volcanic outer arc developed with the vertical growth of the subduction complex. Constructed forearc basins developed with their northern margins on the Pontid continent and southern margins on the outer arc. Accretionary forearc basins were formed on the imbricated morphology of the subduction complex further south.

Pontid Mountains were exposed as a result of the collison of the Anatolian and the Pontid continents later than Late Cretaceous. The primitive form of the Western Pontid Mountains was formed during Late Eocene and Oligocene. Thrust faults dipping southwards in the northern and northwards in the southern flanks of the mountain belt were produced as a result of the prevailing compressional forces. The forearc basins located in the south of the developping belt gained the characteristics of molasse basips during Tertiary.

TURBIDITES, OLISTOSTROME AND OLISTOLITHS OF EOCENE AGE IN THE SUNGURLU REGION OF THE ÇANKIRI-ÇORUM BASIN

Muhittin ŞENALP

Mineral Research and Exploration Institute of Turkey, Ankara

ABSTRACT. — Çankırı-Çorum basin, greater part of which is today covered by terrestrial deposits, was a narrow and deep pelagic basin from at least the beginning of Upper Cretaceous to the Middle Eocene. This asymmetric and E-W elongated basin was bordered to the north by a Cordillery of ophiolitic melange and to the south by older formations. In the Sungurlu region rocks of turbiolite, olistostrome and olistolith facies were deposited during the Lower Eocene. The regional distribution and lithological characteristics of these units indicate that they were all derived from the northern ophiolitic melange terrain. Sprodic rapid uplift of this source terrain resulted in the sliding of large scale allochthonous masses into the basin and these have an important place in the regional stratigraphy. When the uplift in the source terrain was slow, turbidites were deposited in the basin. With the stabilization of the regional tectonics in the Middle Eocene, deposition in the turbidite, olistostrome and olistolith facies was terminated and shallow marine conditions were established. The marine conditions were completely terminated in the Upper Eocene; evaporites and fluviatile deposits accumulated up to the end of. Miocene. An important folding episode occurred at the end of Miocene; Lower Pliocene terrastrial deposits lie with a distinct angular unconformity on older units.

COBALT-GOLD MINERALS IN KÜRE PYRITIC COPPER DEPOSITS (KASTAMONU PROVINCE, N TURKEY) AND THEIR ECONOMIC VALUES

Ahmet ÇAĞATAY, Hüseyin PEHLİVANOĞLU and Yılmaz ALTUN

Mineral Research and Exploration Institute of Turkey, Ankara

ABSTRACT. — Pyritic copper deposits found in Küre as stockwork-disseminated ore at the upper levels of spillites and as massive lenses between the spillites and trgillites. A strong tectonic movement appear to have been resulted in the formation of complex structures in the neighborhood of the deposit.

Up to the present day, the deposits have been mined for copper and pyrite, the main pre-bearing minerals being chalcopyrite and pyrite. In addition to these, linneite, brawoite (cobalt minerals) and native gold, which are all of the grade above economic cut-off, have been obtained. The deposits have an approximately 13 m.y.t. of ore with the cobalt and gold content of 0.3 % and 2.48 g/ton respectively. According to the estimates based on march 1981 prices, cobalt, gold and copper content of the deposits are equivalent to US $ 2 194 155 000, US $ 592 200 000, and US $ 544 194 770 respectively. Thus, in the deposits, gold has an economic value slightly more than copper and cobalt has an economic value approximately four times of copper.

HYDROGEOLOGICAL STUDY OF BULAMAÇLI THERMAL WATER SOURCE, IN KIRŞEHİR, ÇİÇEKDAĞI

Baki CANİK

Selçuk University Faculty of Science, Konya

ABSTRACT. — This study includes the origin, feeding and physical-chemical qualities of Bulamaçlı thermal water spring, and, also the type of drilling suggested to increase its discharge. In the studied area it is found that Paleocene age granites are overlied by Lower Eocene ryolites, then by Middle Eocene age sandstones extending unconformably. Then comes limestones and marls at top. Thermal waters extract through a faulting along E-W. Temperature of water is 44.5° C and discharge is 1.45 It/sec. Another thermal water drunk with an aim of curing in thermal-baths has a temperature of 29.5° C and a discharge of 3.36 m3 a day.

Both waters have heated by geothermal gradient, and have properties partly resulted from some internal ions. Classification in chemical composition is equated and it is a thermal water with «sodium, chlor, carbonate, radioactive and carbondioxide». Chemical analyses in various times showed the solved material about 4107-5413 mg/lt. 3 protecting areas surrounding each other have been suggested to eliminate the external effects on thermal water springs.

Discharge of thermal water should be increased for the establishment of a modern thermal center in Bulamaçlı. A drillhole 500 m deep will help this increase which should be opened without delay if thermal tourism of the area is wanted develop.

AGE OF THE ÇALDAĞ LIMESTONE OF THE HAYMANA- POLATLI BASIN

Engin MERİÇ and Naci GÖRÜR

İstanbul Technical University, Faculty of Mining, Istanbul

ABSTRACT.— Çaldağ limestone is generally considered, to be Montian in age, mainly, on the evidence that it contains abundant *Laffitteina bibensis* Marie. Whereas, the presence of *Bolkarina aksarayi* Sirel, *Lacazina* sp., *Planorbulina* sp., *Kathina* sp. and *Operculina* sp., recognized in this study, in the upper part of this carbonate unit indicates that this age extends to Thanetian.

FOSSIL COPROLITES OF TURKEY

İbrahim TEKKAYA

Mineral Research and Exploration Institute of Turkey, Ankara

ABSTRACT.— During the paleontological studies in Anatolia some coprolite remains was found continental vertebrate fossils. There are many differences between the morphological structure and biometrical measurements of coprolites of *Protictitherium gaillardi* (Major) and *Percrocuta (Percrocuta)* aff. *tungurensis* (Colbert) which was found in the Hırsızderesi locality of Çandır. This difference can also be seen clearly between *Hyaena (Crocuta) Şenyüreki* Ozansoy which was found in Middle Sinap and *Hyaena (Crocuta) eximia* Roth et Wagner discovered in Bayraktepe. On the other hand, those coprolites which have not been studied, but this investigation reflects the climatic conditions of the region at that time.