

ACTIVITIES OF THE M. T. A. INSTITUTE DURING 1953-1954

GEOLOGICAL STUDIES DURING 1053:

1/100 000 scale geological mapping of an area covering 144 370 km² was completed, besides the geological mapping of 6 900 km, on different and larger scales, for the purpose of the exploration of coal, petroleum and metallic ore deposits. The geologists working in cooperation with those employed by the U. S. Atomic Energy Commission discovered hopeful radioactive occurrences in various parts of the country. Studies for finding raw material for the cement factories, which will be erected in near future, were also completed. The geophysical reconnaissance of the possible structures was made with the gravimetric method at the plains of Cizre, Urfa, Gaziantep and Adana. The study of surroundings of Adana with seismic method has been completed.

An area of 2830 km² was surveyed on different scales, in addition to the analysis of 1548 samples in the chemical laboratory, the determination of 4633 samples in the mineralogy laboratory, and the macro and micropaleontological determinations of 34 and 51 collections respectively in the paleontology laboratory.

GEOLOGICAL STUDIES DURING 1064:

1/100 000 scale geological mapping of an area covering 136 611 km² was completed. In different regions the possibilities of petroleum structures were

investigated; amongst these the reconnaissance work in the regions Antalya - Mut, Central Anatolia, and Malatya, can be mentioned. Efforts were made to discover new coal fields in order to maintain the coal supply needed for the expanding industry, the coal fields situated at the Eastern part of Ereğli were investigated for the same purpose. The geological study of various lignite occurrences was carried out to maintain the fuel supply for producing the energy needed for sugar, cement and textile factories.

The Institute concentrated the work on the prospection of rare and radioactive minerals at Edremit, Yıldızeli (Sivas), Kaman, Karakaya, Uludağ and Kırşehir Massives and Divriği, besides the investigation of iron ore occurrences at Büyük Eymir in the triangle of Çanakkale, Edremit and Dikili where the geophysical prospection was carried out to further the investigations.

In order to make use of underground water in the arid regions, especially in Central Anatolia, efforts were made to evaluate the underground water at the plain of Konya - Polatlı where the first results obtained were considered to be positive. Drinking water was supplied locally to the State Farms of Polatlı, Altınova, Gözlü from the drill holes sunk at these Farms. The investigations for discovering the artesian water in deeper zones, have been continued for the purpose of irrigation of lands. The

other miscellaneous studies include: the raw material supply for cement factories; sand suitable for manufacture of glass; sand for casting; raw material for brick - tile factories and for the fine ceramic industry.

Geophysical work was carried out in Central Anatolia and the Eastern Carboniferous districts, in order to discover the structure of the petroleum fields and the coal fields respectively.

An area of 3500 km² was surveyed on different scales for the detailed geological work.

The technical and scientific reports handed in, since the foundation date of the Institute, were compiled and classified. These reports have been offered to the service of the public.

MINING EXPLORATION WORK:

1 — The Exploration of Çeltek Lignite:

10 bore holes 3 503.84 m, in total, were drilled at Çeltek, near Merzifon, in the province of Amasya, in order to determine the thickness and extension of lignite seams dipping to the west of Tersakan Çay (River Tersakan). The electrical well logging of the bore holes were completed. As a result of the exploration work, 1 950 000 tons of visible reserves were calculated and 600 000 tons of possible reserves were estimated outside the concession of the Çeltek Lignite Mine which is already in operation.

2 — (Üçköprü Chromite Deposits:

The chromite deposits occurring at Üçköprü, Kum Ocağı, and Suluk near the village of Gürleyik situated by Köyceğiz, a town in the province of Muğla, were investigated by surface boring, underground ring drilling, and under-

ground excavation such as drifts, crosscuts winzes and raises. When, work was completed, the reserves of 92 296 tons of chromium ore of average grade (45.35 % Cr₂ O₃) were proved.

3 — Uludağ Tungsten ore:

The exploration of Uludağ tungsten ore deposits started in 1951 and the work was completed successfully in 1954. During the short working season at the peak of Uludağ, a great deal of work had to be done in 1954 in order to be able to reach conclusions with regard to the reserves. The exploration work carried out in 1954 includes:

Total depth of surface boring . . .	1791.66 m.
Total depth of underground ring drilling	762.42 m.
Total length of underground excavations (raises, winzes, crosscuts and drifts). . . .	344.45 m.

The presence of 10 million tons of tungsten ore carrying an average grade of 0.43 % WO₃ was calculated.

4 — Surface Boring at Azdavay:

In order to verify the presence of coal towards the East of the Zonguldak coal field, a total depth of 2 938.35 m. of surface bore holes were drilled at Azdavay, a town in the province of Kastamonu. The drilling programme to be continued during 1955.

5 — Seyitömer Lignite Field:

The lignite reserves of about 90 000-000 tons had been estimated at Seyitömer, village situated few kilometers from Kütahya. The exploration work started at Seyitömer, where the reserve of 11 million tons of lignite was proved in 1953, as a raw material supply for the Nitrogen Industry. However, in order to mine the deposit economically

and maintain the lignite production at a steady level, further information with regard to the reserves was necessary, because the proved reserve of 11 million tons was not considered sufficient for the Nitrogen Industry. Thus the exploration work was resumed. As a result, surface bore holes were drilled and a number of shafts were sunk during 1954, consequently the presence of 35-39 million tons of lignite was estimated, besides the 11 million tons proved in 1953. In order to verify the conclusion reached, it was decided to continue the drilling programme in 1955. At the end of the drilling programme the presence of 50 million tons will be proved.

PETROLEUM EXPLORATION WORK:

The petroleum exploration work completed at Garzan and Raman and the Batman petroleum refinery were transferred to "Türkiye Petrolleri Anonim Ortaklığı" (Turkish Petroleum Company) after the new petroleum law came into force in 1954. The geological study for the prospection of petroleum fields is now confined to new and virgin grounds.

The exploration work done between the years of 1950-1954 by the M.T.A.

Institute until the foundation date of Türkiye Petrol Anonim Ortaklığı (16.2.1955), can be summarized as:

- 1 — Raman petroleum field: 7 million tons of petroleum reserve was proved.
- 2 — Garzan petroleum field: 3 million tons of petroleum reserve was found.

9 932.32 m. of drilling was completed in 1954, in addition to 40 976.73 m. of bore hole drilled at Raman and Garzan between the years of 1950 - 1953. Production of crude petroleum:

<u>Year</u>	<u>Ton</u>
1950	17 037
1951	19 064
1952	21 697
1953	26 545
1954	69 354

The production of derivatives from the refinery:

12 421 tons of crude petroleum was treated at the Batman Refinery. The list of the derivatives produced are given below:

- 841 tons of gasoline
- 3 846 „ „ motorin oil
- 6 854 „ „ asphalt
- 644 „ „ MC₄ asphalt.