

## PAPER DETAILS

TITLE: Activities of the Mineral Research and Exploration Institute during 1961

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# ACTIVITIES OF THE MINERAL RESEARCH AND EXPLORATION INSTITUTE DURING 1961

## I. GEOLOGICAL WORK

### 1. Geological mapping

Toward the completion of Ankara, Adana, Samsun and İzmir map-sections on the 1/500,000 scale Jeologic Map of Turkey, totalling some 61,052 m<sup>2</sup>, correlation, compilation and revision work was carried out on 1/100,000 scale jeologic maps falling within the said map-sections.

### 2. Prospecting for oil

Prospection work with a view to locating oil was carried on in Malatya, Çankırı, Çorum, Yozgat, Bitlis, Erzurum and Sivas regions, all within the so-called «closed-district». Geologic study of 4000 km<sup>2</sup>(map scale: 1/100,000), 4097 km<sup>2</sup> (map scale : 1/25,000; and 97 km<sup>2</sup> (map scale : 1/10,000) was completed.

### 3. Hydrogeological and geotechnical Studies

Studies on some of the hot springs, such as Kızılcahamam (Ankara), Agamemnun (İzmir) and Haruniye (Adana) were carried through, in addition to the hydrogeologic study of Çamkoru (Ankara).

## II. MINING GEOLOGY

**Prospecting for copper, lead, zinc and pyrites (Sulphurous ores).** - Wherever necessary geological Studies and drilling were conducted in order to determine size and extem of the Murgul (Artvin) copper ore deposit and to evaluate the area to the south of it.

Detailed geplogy was done in Çayeli and Ardesen (Rize) regions and some significant mineralizations were noted. Detailed geology was also carried out in the metallogenic province in the Black Sea coastal region, along the stretches Giresun-Espiye and Ordu-Pirasis.

**Gold.** —Search for gold continued in Kartaldağ, Sarpdağ (Çanakkale), Ödemiş, Tire and Arapdağ (İzmir) regions, using general geology and drilling where necessary.

**Chrome.** — Detailed geological Studies were carried out to investigate the development of the Guleman chrome deposit, with promising results.

**Aluminium.** — Suitable parts of the Thaurus mountains were prospected for aluminium and some interesting results obtained.

**Boron.** — Suitable spots encountered in the Afyon and Eskişehir regions were drilled for boron and a number of encouraging observations noted.

**Phosphates.** ----- Southeastern Anatolia was systematically prospected for phosphates, yet no find of economic value- was reported.

**Heavy and rare minerals.** — To help investigate what possibilities Turkey may hold in connection with some of the minerals taking place in the Platinum and Iridium groups, river deposits in the Fethiye region were systematically prospected.

**Industrial raw materials.** — In order to get raw materials for fine ceramics and china making, Pirinçciköy, Boğazköy, Bağlıca and Aktaşlar (İstanbul) were searched for suitable clay and, likewise, Ordu and Giresun regions for caolin, without success. A variety of mineral occurrences were visited in the vicinity of Soğucak and Dumanköy (Çanakkale) and their preliminary Studies completed together with those of salt deposits in Yerköy, Tepesidelik, Hacıbektaş, Arapsun and Çankırı.

**Coal.** — Geological Studies of various lignite occurrences were taken up and carried to completion in the districts of Saray-Dümbekçi, Kütahya, Büyükçekmece (İstanbul), Soğukpınar, Malkara (Tekirdağ), Tunçbilek (Kütahya), Lisanlı (Sivas), Şakiler (Çanakkale), Helvacı, Yeniçeri, Uzunalan, Hacıkasım, Terzialan, Etili, Çan (Çanakkale), Salıpazar, Türkbeşli (Bolu), Ovacık (Çorum).

**Iron.** — In the district of Hasançelebi, were discovered iron ore reserves (% 41.5-52.0 Fe) estimated at 4,500,000 tons. In addition to the 11,360,000 tons reported from last years's work, this year in the district of Deveci (Malatya) a total of \$ 23.000,000 tons of siderite, marked down as an aggregate of visible, probable and possible ore, was discovered. Exploratory drilling continued in the regions of Avnik (Elazığ), Pınarözü, Davutoğlu (Çetinkaya-Sivas), Karamadazı (Yahyalı-Kayseri) and 3,000,000 tons visible and probable ore was reported from this latter.

**Prospecting for radioactive minerals.** — In the regions of Aydın, Salihli (Manisa), Orhaneli (Bursa), Antalya, Afyon, Uşak, Eskişehir, Bolu and Central Anatolia as a whole, prospection activities took place with a view to finding radioactive mineral deposits. 56,000 km<sup>2</sup> was covered by air and 3273 km<sup>2</sup> on car. On an other 9419 km<sup>2</sup> general geology through conventional methods was applied while 2297 hectares were searched systematically. This work was coupled with all the necessary excavations, tunnelling and trenching. Numerous leads having come to light, they were earmarked for further study.

### III. GEOPHYSICS

Magnetometric measurements were taken to locate iron ore areas in Hasançelebi (Malatya) region, electromagnetic method was used in the search of pyrite and chalcopyrite in the Espiye (Giresun), Ardeşen, Çayeli (Rize) regions, while resistivity and syismic Studies were carried on in the district of Çan (Çanakkale) to explore for gold and coal, respectively.

## IV. LIST OF DRILLINGS

Type of deposit	Number of drill-holes	Drilling total (meters)	Location
Bituminous coal	3	2245	Amasra
Lignite	46	11853	Devecikonağı (Bursa), Silivri, Büyükçekmece (İstanbul)
Gold	20	2369	Madendağ, Kartaldağ (Çanakkale), Arapdağ (İzmir)
Iron	49	5314	Hasançelebi (Malatya), Çetinkaya (Sivas), Karamada (Kayseri), Avnik (Bingöl), Keskin (Ankara), Karacalı (Kırıkkale-Ankara), Karabacak (Yozgat)
Copper	12	2529	Murgul (Artvin)
Boron	7	780	Sürçanlı (Afyon), Seyitgazi (Eskişehir)
Limonite	3	46	Emet (Kütahya)
Radioactive minerals	53	2877	Koçarlı (Aydın), Milâs (Muğla), Turgut (İzmir)
Water	4	191	Etimesgut, Kızılcahamam, Çankırı (Ankara)

## V. WORK DONE IN LABORATORIES

Paleontology : Macro-micro and phyto-paleontological determinations numbered 2496.

In various Labs (chemical, mineralogy, flotation, ceramics, coal and petroleum) dry analyses and tests were carried out on 6138 different samples.

## VI. TOPOGRAPHY AND PHOTOGEOLOGY

Maps of 1/500-1/50,000 scales adding up to 14,540 hectares were prepared covering different study areas, in addition to the sections drawn to correspond to 94.5 km, 98 triangulation and 7517 boundary points were set, location of 1308 well sites, shafts and tunnel mouths, together with other necessary measurements, were determined. During the geophysical work 33,843 seismic drilling, resistivity, gravimetry and magnetometry points, in addition to 10,429 polygon points, were determined and polygon measurements completed.