THE MAGNESITE DEPOSITS OF MANCHURIA.

By
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1. Position and Geography.

The Magnesite deposits occur at intervals in the form of lense or bed alternating with dolomite throughout a range extending from Kuan-ma-shan, 5.5 k.m. east of Tashihchiao (大石橋) Station (210 k.m. north from Dairen, (大連) 154 k.m. south from Mukden (奉天) as far as Moku (?) (磨峪), where one of the principal talc deposita is located, about 30 k.m. northeast of Tashihchiao (大石橋) Station. Others occur at a number of places along the South Manchuria Railway in the southwestern direction, to a point 8.5. k.m. southwest of Kaiping (蓋平) Station (29 k.m. from Tashihchiao).

Although the deposits now being worked are confined to Kuan-ma-shan (官馬山), Niu-Hsin-Shan (牛心山) and Pai-hu-shan (白虎山), yet there are many other fields large enough to be worth operating, in other parts of this district.

The entire exposed deposits cover large areas estimated at 350 square kilometres approximately.

The main deposits of this seam, which constitute the northeastern portion, form a mountain range rising from 250 metres to 500 meters above the plain level, while the remaining part in the southeast takes the form of mounds, only 50 metres high, takes hollows.

Talc deposits are found in association with the magnesite chiefly in the very sheared zone.

2. Geology and Deposit.

The geological relation observed in this area are gneiss, pre-Cambrian rocks, alluvium, granite, and several dyke rocks. The general geologic section of this district is as follows:

Quaternary	Sand and gravel
Dikes	porphyritic diabase (?) and quartz-porphry
Cambrian	absent
Pre-cambrian	Lower part: slate, schist,
(Algonkian)	Upper part: dolomite, magnesite marble, quartzite and sandstone, etc.
Archean (?)	gneiss.

Gneiss generally belongs to biotite granitic gneiss of uniform texture, and is overlaid by the pre-Cambrian (perhaps Algonkian) schists and slates. The lower part of this schist complex are characterized by some accessory minerals such as staurolite, garnet, and andalusite, etc., constituting the mountain range or surface formations throughout, especially extensively distributed over the southern part of this area.

The upper part of the magnesite consists generally of schist, dolomite, or of alternation of schist, slate, and dolomite, etc.

These rocks, are intruded by later pre-Cambrian granite, syenite (?), and other igneous rocks.

With their varying degrees of resistance to erosion and weathering, magnesite and dolomite constitute the principal ridges traversing the area, forming excellent magnesite zones.

The deposits of the magnesite are composed of a coarse crystalline mass and are found generally in beds or lenses alternating with dolomite, showing a distinct contact line with dolomite. They also associate with a thin bed of schist or slate occasionally.

The relative position and numbers of beds are not constant,

but the total thickness of these two layers (magnesite and dolomite) is at least 1,500 metres, of which the dolomite (in the vicinity of Moku) takes up over 70 percent, and the magnesite beds less than 20 percent.

3, Production and Price.

The sales returns for magnesite these three years follow:

Fiscal Year

1920	4,204 tons
1921	3,078 tons
1922	5,112 tons

The price quoted ranged between 3 yen and 3.50 yen per ton for delivery at either Tashihchiao (大石橋) or Tapingshan (大平山) Station.

As to talc at Haicheng, (海城) the returns were as under:

Fiscal Year

1920	837 tons
1921	2,543 tons
1922	2,466 tons

The price quoted on talc in its natural form, not including packing charges, was from 8 yen to 8.50 yen per ton.

It may be added the above represents what was handled by the S. M. R. Co. only.

The total annual demands at present may be placed at 7,000,000 tons of magnesite, and 10,000 tons of talc,