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HYALITE FROM JORDANÓW NEAR SOBÓTKA (LOWER SILESIA)

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Hyalite, one of the commonest minerals occurring in the leucocratic metamorphosed zone at Jordanów, had so far no comprehensive scientific description. It is paragenetic with diopside, prehnite, pumpellyite, desmine, grossular, chromium hydrogrossular, tremolite, actinolite (nephrite), minerals of epidote group (zoisite and clinozoisite), vermiculite, vesuvianite, and others. The overwhelming part of these minerals has been thoroughly studied by Traube (1888), Gaweł (1957), Heflik (1967). The place where hyalite occurs at Jordanów is known for the exploitation of nephrite and serpentinite. Hyalite generally forms characteristic „varnishes”, crustifications, sinters or clusters (Phot. 1) on the surface of beddings of serpentinite and quartz-zoisite rocks or on the surfaces of nephrite lenses. It may also occur as impregnations of grossular rocks. Its incrustations and laminae are some millimetres thick. Hyalite is, as a rule, colourless and transparent, but also greenish, brownyellowish, brownreddish and occasionally black varietites are encountered. Its surface is sometimes covered with subtle coating of iron hydroxides. At the contact of hyalite with the rock on which it accumulates, fine-flaked concentrations of saponite have been recorded.

Thin sections of hyalite, cut off perpendicular to the growth plane, reveal radial-spherical structure under the microscope. It is weakly anisotropic (Phot. 2), n_{Na} being about 1.461. An X-ray picture of a pure hyalite sample showed the lack of crystalline structure.

An infra-red absorption spectrum obtained using KBr disks is nearly the same as the standard spectrum of opal (Moenke 1962).

The difficulty of obtaining an adequately large sample of hyalite without a saponite admixture made it impossible to interpret the thermogram or the results of a spectral analysis.

Samples heated for 30 days at temperature of 70—90°C under normal pressure failed to show any signs of ordering.

Hyalite from Jordanów represents relatively pure opal. Its weak opti-

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cal anisotropy is very likely connected with internal stresses that probably are due to a tendency to order the crystal structure.

Mineralogical and petrographical investigations carried out so far in the leucocratic metamorphosed zone at Jordanów prove that hyalite under study belongs to the final, low-thermal products of alterations of the local rocks and minerals.

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Streszczenie

Jest to minerał najczęściej bezbarwny i przezroczysty. Niekiedy spotykany jest w odmianach zielonawych, brunatnożółtawych a nawet czarnych. Tworzy najczęściej charakterystyczne polewy, naskorupienia, nacieki lub skupienia groniaste (fot. 1) na powierzchniach uławiczenia serpentynitu, skały kwarcowo-zoisytowej i na powierzchniach soczew nefrytowych. Współwystępuje on z diopsydem, prehnitem, pumpellyitem, desminem, grossularem, hydrogrossularem chromowym, tremolitem, aktynolitem (nefrytem), minerałami grupy epidotu (zoisytem, klinozoisytem), wermikulitem, wezuwianem i in. (W. Heflik 1967). W płytkach cienkich wykazuje budowę radialno-sferyczną. Jest słabo anizotropowy (fot. 2). n_{Na} około 1,461.

Zdjęcie rentgenowskie czystej próbki hialitu wykazało brak struktury krystalicznej.

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Резюме

Гяалит является, как правило, бесцветным, прозрачным минералом. Иногда встречаются зеленоватые, буровато-желтые и даже черные разновидности. Чаще всего он образует характерные оболочки, корки, натечные формы и гроздьевидные скопления (фото 1) на поверхностях отдельности серпентинита, кварц-цоизитовой породы и на поверхностях нефритовых линз. Встречается совместно с диопсидом, пренимом, пум-

пеллитом, десмином, гроссуляром, хромистым гидрогроссуляром, тремолитом, актинолитом (нефритом), минералами группы эпидота (цоизитом, клиноцоизитом), вермикулитом, везувианом и др. (В. Хефлик 1967). В шлифах наблюдается радиально-сферическое строение гяалита слабая анизотропия (фото 2), n_{Na} около 1,461. Рентгенографический снимок чистого образца гяалита показал отсутствие кристаллической структуры.

PLATE I (PLANSZA I, ТАБЛИЦА I)

Phot. 1. Colloform hyalite on nephrite. Magn. $\times 6$

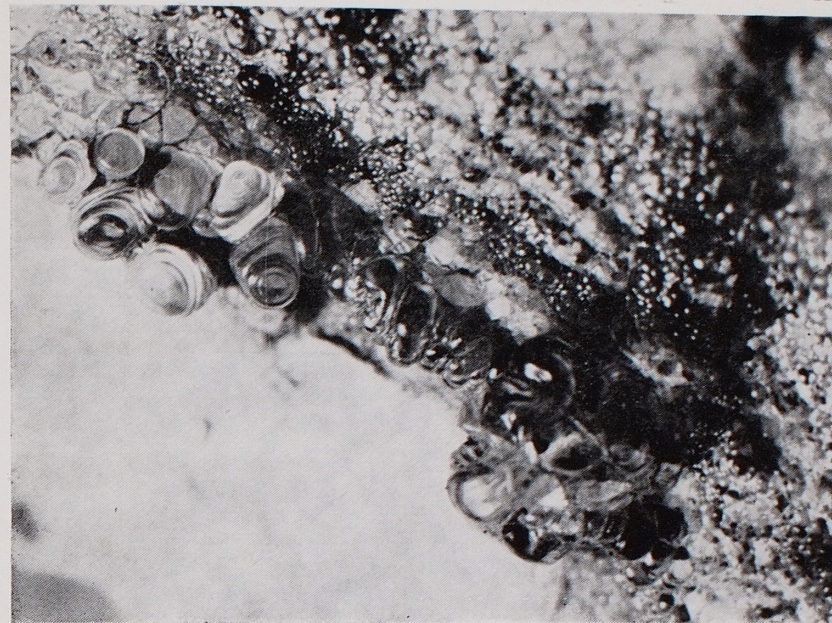
Groniaste skupienia hialitu na nefrycie. Pow. $\times 6$

Гроздьевидные скопления гиалита на нефрите. Увел. $\times 6$

Phot. 2. Weak local birefringence in isotropic hyalite. Crossed nicols. Magn. $\times 30$

Słaba lokalna dwójłomność w izotropowym hialicie. Nikole skrzyżowane. Pow. $\times 30$

Слабое местное дупреломление в изотропическом гиалите. Николи скрещенные. Увел. $\times 30$



Phot. 1



Phot. 2

Wiesław HEFLIK, Włodzimierz PARACHONIAK — Hyalite from Jordanów near Sobótka (Lower Silesia)