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What was hydrophilite?

HYDROPHILITE was described by J. F. L. Hausmann (Handb. Mineral. (1813), 857) as a coating on gypsum from the Lüneburg boracite deposit; he states that its constituents are calcium chloride and water, and that it is hygroscopic, deliquescent, very soluble in water, soluble in alcohol, and has an intensely bitter taste. Few authors have mentioned it; it does not appear in the first three editions of Dana's System, but in the 4th (p. 506) and 5th (App. II, p. 29) it appears as chloride of calcium. In the 6th edition, 1892, p. 161, it is equated with Scacchi's chlorocalcite, formulated $CaCl_2$ (ignoring the water mentioned by Hausmann), and adopted as the species name. In the 7th edn. (**2**, 41) it appears as a doubtful chloride of calcium, with several additional localities besides Lüneburg, and the comment that it was possibly chlorocalcite, now formulated $KCaCl_3$: this it certainly was not, for $KCaCl_3$ is decomposed by alcohol, with separation of insoluble KCl, and Hausmann specifically mentions solubility in alcohol. Hydrophilite was evidently one of the several hydrates of $CaCl_2$, and may have been an early find of antarcticite ($6H_2O$) or sinjarite ($2H_2O$), but remains undefined.

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Zoned glauconite from the Upper Greensand

CAYEUX (1906) specifically associated the alteration of glauconite grains with the formation of brown iron oxides. The process is usually thought of as proceeding from the outside of the grain inwards, and the literature abounds with references to such grains with 'iron rims'. Bentor and Kastner (1965) reported grains in which the reverse appeared to be true, i.e. a brown centre and a green rim, and referred to them as 'internally oxidized grains', but gave no further chemical or mineralogical data.

This note reports the existence of glauconite grains with green rims completely surrounding a brown centre, in the glauconitic sand of the Upper Greensand (Jukes-Browne and Hill, 1900) of the Vale of Pewsey, Wiltshire, U.K. The grains are rare, approximately one in three thousand 'normal' dark green glauconite grains. They can be observed only in thin section because whole grains are usually too optically dense for the central browning to be seen. In outline, size, and optical properties the grains resemble the bulk of their fellow glauconites being *c.* 125–250 μm in diameter, roughly spherical or ovoid, occasionally fissured and with R.I. = 1.62 (fig. 1).

Under high-power optical examination (×420) the rims are clearly optically continuous with the centre, implying that the former are not separate

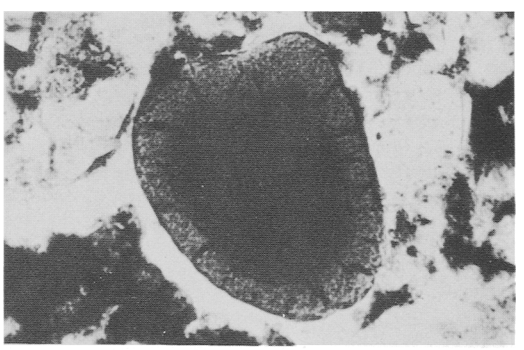

FIG. 1. Glauconite grain showing brown (dark) centre and green (lighter) rim (Bar = 250 μm).