

*On the Crystalline Form of Gyrolite.*

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IN a late number of the Magazine I mentioned that I had obtained from several of the Treshinish Islands specimens of gyrolite, and that one of these carried crystals which seemed sufficiently perfect for the determination of the form of the mineral.

A careful examination of the specimen showed it to be somewhat fragile; and, as we know that the mineral is itself excessively tender as well as soft, I thought it desirable that the most should be made of so unique an example.

Accordingly I wrote to Professor Des Cloizeaux, asking him if he would undertake the examination of its optical properties and crystalline form, adding that I would be gratified if he would forward the results to the *Mineralogical Magazine*.

Before forwarding the specimen (after receipt of his obliging consent), I bethought me of the risks of loss or of damage in carriage, and concluded that it was desirable that I should myself make such examination as was possible without attempting the removal of the crystals from the rock.

At one corner of the small druse which holds the crystals there is a closely superimposed cluster of crystals which have a surface equal to that of a split pea; while in the centre of the cavity there lie two much more minute crystals, in a nearly flat position, and perfect in their edges all round their circumferences.

It was from the latter that I hoped to arrive at some results. With a view to this, the specimen was grasped in a mineral-holder which I devised some years ago.

The lower part of this holder screws into the upper plate of my microscope stage; and, as the graduated revolving frame has a diameter of  $6\frac{1}{2}$  inches, its goniometric accuracy is sufficient for ordinary purposes. An upright from the lower part of the holder has a large ball-and-socket-joint, the upper part of which carries the grasping appliance employed by watchmakers for holding watch-glasses. This grasping

appliance has in my instrument a range sufficient to hold firmly anything between  $\frac{5}{8}$  in. up to  $2\frac{1}{2}$  ins. With the addition of three small screws in the three upright arms, it can grasp the smallest crystal.<sup>1</sup>

By means of the slides of the mechanical stage, acting in conjunction with its centring screws, the several angles of the crystals can successively be brought into the required positions; while by means of the ball-and-socket-joint the crystal itself can, by successively focussing its different parts, be brought at least *nearly perpendicular* to the axis of the instrument.

It is in this last particular, however, that such a method is unsatisfactory—on account of uncertainty. Any *cant* must alter the angles; these are read by bringing the faces successively against the cross-thread of the cyc-picce.

On account of this, the results I obtained are to be regarded as merely approximative.

The crystals have the form shown in the accompanying figure. For the one angle I got  $128^{\circ} 45'$  in one crystal, and  $128^{\circ} 55'$ , not so sharply, in the other.

There are two very narrow bevelled faces upon one edge; one certainly upon another; and also, apparently, one upon the third.

These bevelled faces are very brilliant and smooth; the flat face not altogether so, sometimes showing superimposed scales.

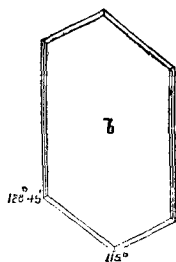
There is a zonal structure, which is parallel to all the edges.

The above, so far as it goes, seems to show gyrolite to be oblique, and near heulandite in form.

Through a nearer approach to equality in the lengths of the sides of the crystals they sometimes appear hexagonal.

On no crystal could I see a face at right angles to what I have lettered *b*; the bevelled faces seemed to bevel to an edge or edges.

On one crystal which I examined at the Islands there seemed to be a face which bevelled at one of the angles; but the crystal which showed this was broken during carriage.



<sup>1</sup> This holder can be obtained from Messrs. Beck, in Cornhill.