



Description of the winch bridge, the oldest suspension bridge in England

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“ Mr. Johnston has formed the various salts resulting from the union of this acid with the base ; and he gives the following account of their general properties :

“ 1. They are all of a deep red colour, crystallizing in four-sided pyramids and rhomboidal prisms. In minute needles their colour is golden-yellow.

“ 2. In the moist state the crystals are liable to decompose by light and heat, becoming externally of a greenish colour, and in solutions depositing a green sediment.

“ 3. They are very soluble in water, but insoluble in alcohol, unless considerably diluted.

“ 4. Their solutions, when hot and concentrated, have a peculiar smell, approaching to that of weak chlorine ; and, with the exception of the salt of lead, they have all a bitterish taste ; that of lead having the sweet taste of its other salts.

“ 5. These solutions are decomposed by sulphuretted hydrogen, becoming green and depositing sulphur. Some of the hydro-sulphurets have a similar effect, but they are not changed by hydrogen gas.

“ 6. Treated in powder with sulphuric acid, they give off chlorine gas. From the salts of barytes, strontian, and lead, it is also partially driven off by a gentle heat.

“ 7. Their solutions are also decomposed by metallic mercury, being changed into green, becoming greenish-yellow, and letting fall a blue precipitate ; the solutions no longer giving a *red*, but a *white*, with nitrate of silver. They have likewise a strong action upon metallic iron, coating it immediately with Prussian blue.

“ 8. They all give similar precipitates with the metallic oxides.

“ 9. When dry they undergo no change by exposure to the air, the salt of cadmium excepted, which deliquesces.

“ 10. Most of them decrepitate when heated, and in the flame of a candle are combustible, throwing out bright white sparks, and leaving a dark brown residue. The salt of barytes melts without sensibly burning ; and that of lead burns silently like tinder, giving minute globules of metallic lead.”—*Brewster's Journal*.

PREPARATION OF PURE MALATE OF LEAD.

Dr. Wöhler states that a perfectly pure malate of lead is readily obtained by the following process : The juice of the berries of the service-tree, before they are quite ripe, is diluted with three or four parts of water, filtered, and heated ; and while boiling a solution of acetate of lead is added as long as any turbidity appears. The solution is then quickly filtered. At first a small quantity of dark-coloured salt subsides ; but on decanting the hot liquid, the malate of lead is deposited on cooling in groups of brilliant white crystals. — *Ibid*.

DESCRIPTION OF THE WINCH BRIDGE, THE OLDEST SUSPENSION BRIDGE IN ENGLAND. BY W. C. TREVELYAN, ESQ.

Having, along with my brother, lately made a short excursion in the upper part of Teesdale, where there is some very beautiful scenery, I took

I took the opportunity of examining the Winch bridge, which is the oldest chain-bridge in Britain, and probably in Europe. As all the accounts of it I have seen are very incorrect in regard to its dimensions, and as I think it interesting to preserve an account of it, I send you the measurements which we took.

The Winch bridge is formed of two chains, composed of links six inches in length, the iron of which is $1\frac{1}{2}$ inch in circumference. The floor, which is laid on the chains, is eighteen inches wide, and has a hand-rail on each side. The chains are fixed by bolts into the rocks at each end. The lengths of the chains are as follow:—

	Feet.	Inches.
Length of chain between the rocks	59	4
_____ supported by the rock on N. side . . .	12	0
_____ S. side,		

not visible, being covered with rubbish.

The centre of the bridge, which is about three feet lower than the ends, was, on the 2nd July 1828, *twenty-one* feet above the level of the water, the depth of which was $8\frac{1}{2}$ feet. This measure is very different from that given in all the printed accounts of it I have seen, which vary in making it from fifty to sixty feet high.

The bridge, which is in a decayed state, and not pleasant to pass over, is steadied by two chains, which are passed round the floor, and fixed in the basalt rocks on the west side.—*Brewster's Journal.*

CHLOROPHÆITE DISCOVERED IN NORTHUMBERLAND.

Mr. William Hutton, of Newcastle-upon-Tyne, has discovered that rare and curious mineral called chlorophæite, in a basaltic dyke near Coquet Water in Northumberland, about two miles north-east of Felton. It exists in the form of small nodules, which, from a specimen kindly sent to Dr. Brewster by W. C. Trevelyan, Esq. has exactly the same appearance and properties as those of the chlorophæite which Major Paterson brought from Ferroe. Mr. Hutton has also observed the same substance at Coaly Hill near Newcastle, but in the earthy form.—*Ibid.*

NOVACULITE.

The hone, or whet-stone slate (the Novaculite of mineralogists), is by far the most interesting and important rock in the slate formation of North Carolina. In my examination of this region, (observes Professor D. Olmsted), I have made it an object to ascertain the localities, and the respective qualities and relative values of this substance. It is found in the greatest abundance in various parts of the slate-formation, although the qualities of different beds are various. The most valuable bed that I have met with, is about seven miles west of Chapel-Hill. It is known by the name of M'Cauley's quarry. It has been opened on the summit of a hill which forms one of three parallel ranges extending from north-east to south-west, and composed chiefly of a green slate, called chlorite. The hone slate occurs in distinct beds, which pre-