

ART. XXI.—*Description of the Nash County Meteorite, which fell in May, 1874; by J. LAWRENCE SMITH, of Louisville, Kentucky.*

THE meteorite of Nash County, North Carolina, fell May 14th, 1874, at 2½ o'clock P. M., near Castalia, in lat. 36° 11', long. 77° 50'. Its fall was accompanied with the successive explosions common in such cases, and with rumbling noises that lasted about four minutes, not unlike the discharge of firearms in a battle a few miles off.

The stones that fell must have exceeded a dozen or more; three only have been found, and they give evidence that the territory over which the fragments fell was ten miles long by over three miles wide. Although occurring in the day, the body appeared luminous to some observers. The three stones found weighed respectively one kilogram, 800 grams, and 5½ kilograms. The second was the fragment of one broken by the fall. Several fragments have come under my observation, from which I am enabled to give the following description.

They are of the more common aspect. They have a dull exterior coating, which in some places does not entirely cover the stones, there being a few spots of the fractured surface, less than a centimeter in diameter, over which the fused matter forming the coating is scattered in the form of pear-shaped beads. In one or two crevices, below the surface, some of the fused matter of the coating has penetrated five millimeters below the surface, and here it is more brilliant than on the surface.

The interior in many parts is of a dark gray color, and in other parts quite light; the principal cause of the dark color is doubtless owing to the larger amount of nickeliferous iron in that part, and in the lighter portion there are some white spots of a mineral that is doubtless enstatite.

The specific gravity of the stone is =2.601. Its composition is

Nickeliferous iron	15.21 p. c.
Stony minerals	84.79

The nickeliferous iron consists of—

Iron	92.12
Nickel	6.20
Cobalt41
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	98.73

Copper and phosphorus not estimated.

The stony part, when treated with a mixture of chlorhydric and nitric acid, gave—insoluble part, 47.02; soluble part, 52.98. The former was found to be composed as follows:

Silica	52·61
Alumina	4·80
Protoxide of iron	13·21
Magnesia	27·31
Alkalies (soda with traces potash and lithia) ..	1·38
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	99·31

and is essentially bronzite. The soluble portion gave—

Silica	38·01
Protoxide of iron	17·51
Magnesia	41·27
Alumina	·46
Sulphur	1·01
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	98·26

This is evidently olivine, with a small amount of sulphide of iron, which is so disseminated through the stone that it is not easily separated completely by mechanical means. From the mineralogical examination and the chemical results detailed above, this meteoric stone consists essentially of nickeliferous iron, bronzite and olivine, with small particles of anorthite and enstatite. Its composition is, therefore, a usual one.

For particulars in regard to the fall of this meteorite I am indebted to Prof. Kerr, State Geologist of North Carolina.