AUGUST 15.

The President, Dr. RUSCHENBERGER, in the chair.

Twenty-three members present.

On Hexagonite, a New Mineral.—Mr. E. GOLDSMITH remarked that Mr. John C. Trautwine, of Philadelphia, had been kind enough to present to him a mineral from near Edwards, St. Lawrence County, N. Y. As it was not comparable with any of the known species that occur in said locality, it was presumed by Mr. T. to be new.

The mineral is crystallized hexagonally, the forms noticed being the infinite pyramid (110), and the basal plane (111). The crystals are small, from about 3 mm. in length and 1 mm. in thickness, although some are 5 mm. thick. Two distinct cleavage planes were observed, which could be easily produced by striking the specimen with the hammer. It was found that these planes intersected at 120°; there is a third cleavage plane parallel to (111), but less smooth than the former.

Fracture uneven. The small crystals and fragments are transparent, while the thicker ones are semi-transparent.

Lustre subvitreous, somewhat glimmering on the cleavage (110); on the basal plane the lustre is dull.

A basal cleavage fragment was introduced between two Nicol prisms transmitting no light, in such a way that its principal axis formed a continuous line with that of the prism, and, no change in the light being observed, the crystal was pronounced uniaxial. The color is pale violet, but not equally distributed; the mineral in spots is colorless, and it is thought that if the substance was absolutely pure it would have no color. The coloring principle, which is a small quantity of manganese, is so finely distributed through the mass that it is impossible to separate it mechanically.

The streak is colorless, and so is a large bulk of the powder.

The substance is brittle.

Its hardness is between apatite and orthoclase; that is, 5.5. S.G = 3.011.

If the substance, in the form of a thin splinter, is heated to redness in the Bunsen burner flame, no change is produced; the same is the case if the oxidizing flame with the blowpipe is directed upon it; but a rounding of the sharp edge of the splinter is effected by treating it in the reducing flame; the transparent substance then becomes opaque and white, enamel-like. On moistening this rounded spot with cobalt solution, and strongly reheating, a violet coloration is produced. In the glass tube there

is no change whatever. The flame reaction indicates the presence of soda.

From the above observation he pronounced the mineral to be infusible.

Fused with microcosmic salt, it shows a skeleton of silica; and if heated with borax in the oxidizing flame, the reaction of manganese is observed; the same if heated with carbonate of soda in the oxidizing flame.

On coal heated with cobalt solution a violet mass is produced, which is due to the presence of a small quantity of alumina and a larger of magnesia.

In regard to its solubility in acids, it was observed that it yielded only to hydrofluoric acid, the others having no effect. The fine powder was fused with carb. soda, in order to find all the elements contained in it by the processes in qualitative chemical analysis in the wet way; by this means were found silica, alumina, and manganese, lime and magnesia.

The quantitative analysis gave these results:—

Silica . . .	57.92	per ct.	contains oxygen	27.91		
Alumina and manganese	2.39	"				
Lime . . .	11.98	"	"	"	3.42	
Magnesia . .	26.23	"	"	"	10.49	= 14.45
Soda . . .	2.10	"	"	"	0.54	
	100.62					

The alumina and manganese amounting to 2.39 per cent. are considered as an impurity, and for this reason they are excluded from the consideration of the ratio. The oxygen ratio of the bases and the silica is as $14.45 : 27.91 = 1 : 1.9$, or adopting 2 for the latter will give the general expression $(\dot{R})\,i_2\dot{S}$, in which $(\dot{R})$ stands for the monoxyds ($\dot{C}a$, $\dot{M}g$, $\dot{N}a$). The new mineral species hexagonite is formulated thus: $(\dot{C}a, \dot{M}g, \dot{N}a)\,\dot{S}i_2$.

As this described bisilicate is anhydrous, and is crystallized in hexagonal form, it consequently belongs to the beryl group, of which it will be the third species.

On Opuntia Rafinesquii and O. vulgaris.—Mr. MARTINDALE remarked that the large natural order of plants, the *Cactaceæ*, comprises about 800 species chiefly natives of tropical countries, and the western part of the United States, where many grow to an immense size. The only representative of this large order in the northern United States, east of the Mississippi, is the genus *Opuntia*. The only species of that genus described in the older works on the flora of that section, is the so-called *O. vulgaris*, "from Massachusetts, southward, mostly near the coast." In the new edition of Gray's Manual, the *O. Missouriensis*, a western species having dry prickly fruit, is admitted as occurring in Wis-