sure (jugular) also followed the arterial blood pressure variations.

Similar experiments in which the intracranial pressure was not modified by chloroform injections showed no direct effect of morphine sulfate or of caffeine sodio-benzoate on the level of intracranial pressure, even when the drugs were given in large doses. When they were given intravenously, there was usually a temporary drop in blood pressure and a parallel drop in intracranial pressure. Hypertonic salt or dextrose solutions were the only agents which produced a rise in blood pressure without a corresponding change in intracranial pressure.

These studies are being continued.

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A STUDY OF THE COMPOSITION OF BLACK CONCRETIONS IN ONONDAGA LIMESTONE

IN the district about the Indian Ladder in the Thacher State Park, southwest of Albany, New York, are found many outcroppings of Onondaga limestone. In this region much blasting has been done to obtain rock for road construction. On the exposed face of one of these quarries was noticed many black spots surrounded by the usual gray of the limestone. In this gray limestone are to be found fossil sponges, corals, starfish, Brachiopods, mollusks and arthropods. Sponges were especially abundant during the Devonian Era. In conformity with this, many white calcite replacements have been recorded. On further examination, these black spots were found to be much more crystallized than the surrounding limestone, and seemed to be similar in shape but of varying dimensions. The shape was roughly ovoid and the dimensions varied from 2 to 8 inches long and 2 to 6 inches in diameter. About 100 pounds of this material were gathered for study. This material was then subdivided with a hammer and chisel to separate the limestone from the black crystalline material.

In nearly all cases these black nodules were found to be a hard central portion having a hardness above 6. This was found to be chert. After having separated the material into three parts, the usual limestone analysis was performed on each portion with the results shown in Table 1.

It is evident from these results that the black color of the black limestone is due to free carbon in a very fine state of subdivision. This carbon had excellent adsorbing properties. It was noticed that correct results could not be obtained for the carbon determination until the extracted carbon was heated for

TABLE 1

	Limestone	Chert	Black limestone
SiO_2	27.65	84.00	12.65
$Al_2O_3 + Fe_2O_3$	1.56	——	——
FeO	——	1.60	0.91
CaO	38.12	5.88	46.97
MgO	1.58	0.00	0.56
CO_2	31.00	6.35	37.85
Fe_2O_3	——	2.05	——
C	——	——	0.38
Na_2O	——		0.00
K_2O	——		0.00
TiO_2	——	0.00	0.00
P_2O_5	——	0.00	0.00
MnO	——	0.00	0.00
Al_2O_3	——		0.00
SrO	——		0.00
S	——		0.00
SO_3	——		0.00
N_2	——	0.00	0.00
Loss on ignition	31.70	6.33	38.60
Hardness	3	7	3
Color	Dark gray	Light gray	Black
Specific gravity	2.70	2.62	2.69

12 hours at 400° C. under reduced pressure. Unless this treatment was given, carbon dioxide obtained from the combustion of this material was unusually high. It was assumed that this excess was caused by adsorbed carbon dioxide. As phosphorus is generally found in fossils and neither phosphorus nor nitrogen were found in the stone, it indicates that they probably escaped as gases.

It is well known that sponges are very siliceous in texture, and upon decomposing leave a silica deposit. This explains the chert generally found at the center of these concretions. With decomposition there is a contraction in volume, thus leaving some space to be filled in. Water left by the decomposition had then dissolved the most soluble material, which was calcium carbonate. After a saturated solution was reached, the calcium carbonate precipitated as calcite. The crystalline form was rhombohedral. The dark color is probably due to the organic matter left by the sponge and was occluded as the calcite precipitated.

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