their movements were rapid, and the number engaged at one time must have been fifty, while it is probable that a hundred were at work, for they were constantly coming from various directions to take or resume their places on the up-stream side of the dam.

The river-bed at this point was made up of water-worn stones, chips of granite, and fragments of bricks, over which there was a steady flow of water, the depth being four or five feet, but varying with the level of the tide.

The mode of raising the material was the same in all cases: the eel attached his mouth to a stone, and then, with many wrigglings and contortions (the head always pointing up-stream), lifted it from the bottom; he then backed down stream, floating with the current, until the stone was over the centre of the heap, when it was dropped, lodging sometimes on one side, and sometimes on the other. He then usually returned for more material to the deep and comparatively still pool formed above the dam by the previous excavations, but in some instances was unable to stem the more rapid current at the top of the dam, and was carried below it. When this happened, he swam around the outer end of the dam, and returned to the pool to resume the work.

I noticed in many instances that the heavier stones were lifted by two eels, working alongside of each other, and carried to their proper places in the structure. Half-bricks, weighing two pounds, were thus transported by one individual, and many of the stones were of much greater weight.

Later in the season many of the eels were lying quietly upon the up-stream side of the dam, and about the middle of July all had disappeared.

The temperature of the water, when the river-current was not met by the tide, was in June about 64° F., and in July 71°.

Stones of various sizes, lying at the base of the shore-wall, were removed; and it was evident that the stability of this wall would have been impaired if it had been built upon a rubble or gravel foundation instead of upon a solid ledge.

John M. Batchelder.

Cambridge.

A viviparous pumpkin.

To-day, on cutting open a common pumpkin fresh from the field and perfectly sound, it was discovered that very many of the seeds had already germinated. The caulicles were from one to three inches in length, while some of the rootlets were over seven inches. The cotyledons, wherever free from the seed-covering, were green in color, and spread so as to expose the growing plumule. In one case the second leaves were partly unfolded. E. T. Nelson.

Delaware, O., Nov. 1.

American pearls.

In answer to George F. Kunz in No. 89, let me say that many pearls, ranging from five to twenty-five or more dollars in value, have been found in the fresh-water mussel in the Little Miami River, a few miles from here. The prevailing color is pink, in various shades. In size they vary, the larger ones being about as large as a pea, or larger. The pearls have been found at various times, from a dozen years ago, up to last April. They are commonly found in the Unio, — U. undulatus, or U. occidens. R. N. Roark.

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FERDINAND VON HOCHSTETTER.

Ferdinand von Hochstetter was born at Esslingen (Wurtemberg), April 30, 1829, and died, after a painful illness of five years, at Vienna, on the 17th of last July. His father, a clergyman, was a well-known botanist, and a professor of natural history. While a pupil of the celebrated geologist and paleontologist, Prof. F. A. Quensted of Tübingen, Hochstteter was a classmate of the late A. Oppel, and is one of the most prominent of the geologists of the school to which science is indebted for such celebrated geologists and paleontologists as Oscar Fraas of Stuttgart; C. Rominger of Ann Arbor, Mich.; A. Oppel, and Trautschold, of Moscow. When an assistant in the Austrian geological survey, he was appointed naturalist of the 'Novara expedition round the world,' 1857–59. After visiting Gibraltar, Rio de Janeiro, the Cape of Good Hope, St. Paul Island, the Nicobar Islands, and Java, Hochstetter left the Novara, shortly after its arrival at New Zealand, and passed almost the whole of 1859 in preparing a careful geological reconnoissance of the northern and southern islands of New Zealand. Scarcely had the Novara anchored at Auckland, before Julius von Haast, an Austrian nobleman of great ability, well known afterward as the director of the Canterbury museum of Christchurch, came on board. Haast had come out a short time before as a settler. Hochstetter at once secured him as his assistant; and after seven months in the northern island, and two months in the province of Nelson in the southern island, with the aid of the New-Zealand government and of the leading citizens of the colony, he succeeded in determining most satisfactorily the geology of this distant country, describing not only the beautiful volcanic formation, but also the secondary, the tertiary, and the quaternary formations, and adding much to our knowledge of geographical geology. The results of Hochstetter's researches were first given as lectures before the Auckland mechanics' institute, June, 1859, and at Nelson in October of the same year. The

New-Zealand government gazette published them, and a special copy was distributed in the colony and in England. Afterward, geological maps were added, and lectures and maps appeared at Auckland in 1864, under the title of 'The geology of New Zealand.' Later, Hochstetter published in Vienna, 1866, two quarto volumes, entitled 'Geologie und paläontologie von Neu Seeland,' the paleontology being worked up by such specialists as Unger, Zittel, Suess, Stoliczka, with the assistance of Hörnes, von Hauer, and Hochstetter himself. Shortly after his return to Vienna, in 1860, Hochstetter was appointed professor of geology and mineralogy at the imperial polytechnic school. In 1867 he was sent by the Austrian government to Paris as a commissioner to the International exhibition, and in 1874 he was assistant director of the Vienna international exhibition. Shortly after this, he was made director of the new imperial museum of natural history, with the difficult task of erecting a new building. Notwithstanding illness, which soon attacked him, Hochstetter had the happiness of seeing all the collections removed to the new building, and arranged so systematically that the Vienna museum now ranks among the first, if not the first, in the world. From 1869 to 1872, Hochstetter was exploring European Turkey, of which he prepared an excellent geological map, with a report. He afterwards visited the Ural Mountains, described in his 'Ueber den Ural,' Berlin, 1873. Hochstetter was also a geographer of note, and his 'Die erde' is justly popular. As vice-president, afterward president, of the geographical society of Vienna, he rendered important services to geography, more especially in assisting the expedition to the north pole, which resulted in the discovery of Franz-Josef Land, and in his continued aid to Dr. Oscar Lenz, the explorer of western Africa, and the traveller who made the remarkable journey from Tangier to Timbuctoo and the Senegal. Finally Hochstetter was selected, in 1872, by the emperor of Austria-Hungary as tutor in natural history to the crown prince.

Ferdinand v. Hochstetter

Personally, Ferdinand von Hochstetter was a most attractive man, a very interesting lecturer, and a powerful conversationalist. He married an English lady; and his house in Döbling, Vienna, was a centre for Austrian *savants*, and for all foreigners visiting the capital of the Austrian empire.

MARRIAGE LAW IN SAVAGERY.[1]

SOCIETY is organized for the regulation of conduct, and conduct is regulated by law in the

[1] See Certain principles of primitive law (*Science*, No. 92).