Fig. 2 shows how the moment and shear vary at points along the length of the rod. The moment causes compression on the upper side of the rod and tension on the lower side. We would expect a crack caused by moment to run from the lower side towards the upper side. This state is seen in the picture.

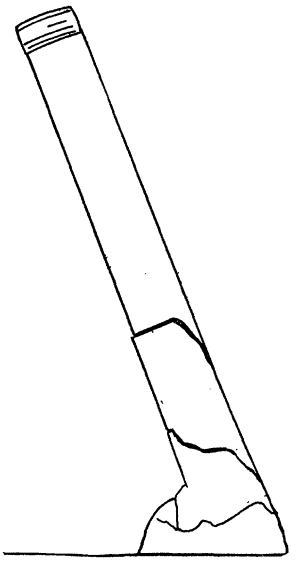

FIG. 3

None of the theories of rupture assume that rupture is caused by shear or moment independently. It would seem that the contention that rupture, if it occurs at all, will happen at or above the center of percussion is unfounded.

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CRASPEDACUSTA NEAR ALBANY, NEW YORK

SOME years ago the pages of SCIENCE carried frequent mention of the occurrence of the medusae of the fresh-water coelenterate, *Craspedacusta sowerbii*. One of the authors, Dr. Waldo L. Schmitt,[1] expressed the opinion that this form would be found to be "more common and widely distributed in the fresh waters of the eastern and eastern central United States, at least, than heretofore believed." Dr. Schmitt's prognostication of ten years ago has proved to be correct, and this beautiful jelly-fish has been recorded rather widely from Oklahoma to New York.

Although the known distribution includes New York State, perhaps a specific note of its local occurrence will augment the available detailed locality records.

[1] Waldo L. Schmitt, SCIENCE, 66: 591–593, 1927.

On August 16, 1937, Mr. C. L. Harpham, of Loudonville, a village three miles north of Albany, N. Y., telephoned me that he believed jelly-fish inhabited the fish pool on his lawn and invited me to inspect it. He had observed these unusual forms in the pool earlier this season, but had not suspected their identity until his attention was drawn to a newspaper account relating the recent acquisition of a number of fresh-water medusae by the New York Aquarium.

That evening I examined the water in the pool and found the jelly-fish as Mr. Harpham had described. The medusae intermittently swam freely near the surface, then sank out of sight. It seemed, however, that the animals spent more time in the depths than at the surface. A stream of water from a garden hose directed into the pool caused the medusae to rise to the surface in numbers, but they soon disappeared below.

About fifty of the medusae were collected, after which their apparent prevalence in the pool seemed to have been in no wise diminished. Upon subsequent laboratory examination of the preserved specimens they were definitely determined as *Craspedacusta sowerbii* (Lankester).

The live medusae which I collected in jars of water from the pool along with scrapings from its sides and a few plant stems, lived for only a little more than twenty-four hours in the containers. While alive they moved about freely and appeared to feed on the minute organisms in the lumps of algal growth. Microscopic examination of the gonads indicated that the contents had been discharged before we captured the medusae.

The rock-lined fish pool carrying the jelly-fish occupies the center of a flower garden near one end of the Harpham residence, which is situated on a high hill at the outskirts of Loudonville village. It is approximately 9½ feet long, 6½ feet wide and 2½ feet deep, while its margins rise only an inch or two above the surrounding closely cut grass. Water in the pool is supplied in part from the village standpipe and in part from rains which have been more than usually copious this summer. However, the elevation of the pool is such as to preclude the entrance of flood waters from any source.

A small clump of narrow-leaved cat-tail (*Typha*), arrow-arum (*Peltandra*), yellow pond lily (*Nymphaea*) and several other aquatic plants were growing in the water of the pool. Its rock sides carried fine debris intermingled with a rich algal growth in which, upon microscopic examination, protozoans, rotifers and round worms of various types were found to be the dominant forms of animal life. Several well-kept goldfish also inhabited the water.

During past winters some of the plants were re-

moved, but the pool was only partially drained. The water has not been entirely withdrawn or the pool thoroughly cleaned since 1929. Apparently the most likely source of introduction of *Craspedacusta* to the pool was in the summer of 1936, when Mr. Harpham, Jr., emptied into it about a quart of water containing a large number of anuran amphibian eggs. This material was obtained from a nearby pond.

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POST-GLACIAL CONSEQUENT STREAMS IN MAINE

IN August, 1936, the writer came upon a gorge on the Merriland River one and three-quarter miles from tide-water, cut about twenty feet through slate. If the till and gravel overlying the slate are added, the cut must be at least thirty feet deep.

The mouth of the Merriland River is located in the northern part of the Town of Wells, near Elms, in southern Maine. The river is nine miles long and from its source runs in an easterly direction for five and one half miles, controlled entirely by the Newington Moraine, then, where the Newington Moraine is very low, bends in a southeasterly direction to the sea. It is a very small stream, and during the summer months the flow is reduced to almost nothing. Only during the seasons of melting snows or heavy rainfall can the stream be dignified by the name of "river."

On the Kennebunk topographic sheet of the U. S. Geological Survey there are eight major streams that reach the sea. Two of these, the Mousam and Kennebunk Rivers, are larger than the other six and may be somewhat older. The writer observed that the Merriland River rises close to the two-hundred-foot contour, with about a mile of headward cutting beyond this. It was then noted that thirty-four streams and branches of streams on the Kennebunk sheet rise close to the two-hundred-foot contour, with evident headward cutting in some cases. Now the upper marine limit for this part of the coast is also considered to lie close to this contour. The writer considers these streams to be *consequent* streams developed during the uplift of the land after the last ice-sheet and ocean withdrew from this region.

When the ice withdrew, the land must have risen faster than sea-level, because the sea-level was also rising, due to deglaciation. When the water stood at the upper marine limit the last ice was withdrawing and the sea washed against the ice-front, as proved by Keith and Katz and others. Antevs says: "If, as is probable, the ocean at the uncovering of the Maine coast (about 30,000 years ago) was lowered some two hundred feet, the land was lowered some two hundred feet plus the amount of the height of the marine limit above the present sea-level. Places with the marine limit at two hundred and fifty feet altitude, for instance, were lowered four hundred and fifty feet and have later risen this amount."[1] It must have taken a long time for the land and ocean to attain their present relations. The consequent streams started their careers as soon as the strand line began to move downward, those streams near the upper marine limit starting first and other streams nearer the sea starting later. The cutting of the gorge of the Merriland River did not begin until late, as it is only about one hundred feet above the tide to-day at the upper part of the gorge.

Considering the fact that cutting goes on mainly during the springs of each year and in times of heavy rainfall, 30,000 years does not seem too long a time to accomplish the results observed. It is enough to say that the time since the upper marine limit, development of consequent streams and the cutting of the gorge of the Merriland River is a very long time, and may be greater than 30,000 years.

The writer believes that such consequent streams may be used to check approximately the upper marine limit, and as a means of testing the determinations of the upper marine limit already made. The word "approximate" is used because headward cutting varies on each of the streams so they can not be used as definitely as beaches, for instance, in such determinations.

It is also possible that where the field evidence of the upper marine limit and the sources of the consequent streams do not coincide, these consequent streams might be used to determine the differential coastal movements that have taken place since the Pleistocene period.

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REPORTS

PILOT FITNESS AND AIRPLANE CRASHES[1]

IN the early days of aviation, particularly during the world war, the need for testing the fitness of pilots for flying was duly recognized. In later years, however, the importance of testing pilot fitness was overshadowed by the development of instruments and the stress laid on them as a guide for flying. In this a

[1] From the Research Laboratory of Physiological Optics, Baltimore, Md.

[1] *Am. Jour. of Science*, 15: 328, April, 1928.