tion of providing them with the scientific training necessary for research in taxonomy.

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PRESSURE POTENTIAL IN A FLUID

THE above title is intended to designate a concept in connection with a fluid pressure field similar to the concept of electric and gravitational potential. It is presented with the expectation of adverse criticism. However, to the author's mind, there are several points in favor of the concept.

First. According to the defining equation, $p = F/A$, pressure is a vector quantity, which is inconsistent with the equation, $pV = \text{work}$, in which p is apparently a scalar quantity. Now if we define absolute pressure potential at a point in the fluid as the work per unit volume required to produce a displacement, the inconsistency is removed, provided p, in the second equation, designates this pressure potential. The difference in potential between two points is defined as it is for the electric field. Such a potential might be thought of as a condition of stress existing in the fluid, whereby a pressure (vector quantity) is caused to act on a surface in contact with the fluid if there is a difference in pressure potential between the two sides of this surface. The symbol P is suggested.

Second. The water analogue used in teaching current electricity is made more complete and can be used in teaching static electricity if this scalar quantity, pressure potential, is used instead of the vector quantity, p. The analogue can even be carried through the equations.

Third. The treatment of sound is materially aided by such a concept. The pressure potential gradient in a sound field gives a pressure field intensity and an acceleration similar to the gravitational field intensity and acceleration in connection with the gravitational potential gradient. The analogue might also be carried over to electromagnetic waves.

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CONGLOMERITE, A NEW ROCK TERM

GEOLOGISTS make careful distinction among sand, sandstone and quartzite, basing the separation upon the relative degree of cementation of the grains of each type of deposit. Thus, sand is simply a mass of uncemented grains, usually predominantly of the mineral quartz. Sandstone goes a step farther in that the grains are cemented together in varying degrees of firmness. In quartzite the cementing is still firmer, amounting usually to a welding together of grains with matrix. The distinction is usually not difficult to make. Sandstones themselves vary in degree of cementation from such friable examples as crumble between the fingers to those which break only with difficulty under the blows of the hammer. However, in every true sandstone the cement yields more easily than the grains so that fracture takes place in the matrix *around* rather than *through* the individual particles of sand. When a quartzite is broken, however, it is noted that the fracture passes, usually with equal ease, through both grains and matrix. So much for the nomenclature of relatively fine-grained types; what of the coarser sediments?

When we attempt to distinguish pebbles as gravel from conglomerate, the separation is simple, exactly like that by which sand and sandstone are differentiated. That is, the individual pebbles in a gravel bank are not cemented one to another, but the fragments of rock, "phenoclasts," in a conglomerate are cemented together. However, there appears to be no term in general use for distinguishing among conglomerates those in which fracture is through the matrix, from those types in which fracture is through matrix and pebble with equal ease. These conditions are of course analogous to those encountered in sandstone and quartzite respectively. Examples of indurated conglomerates in which there has been a welding together of matrix and pebbles are not rare. They are particularly well illustrated in the partially metamorphosed or "stretched" Carboniferous conglomerates of Rhode Island, especially those east of the City of Newport and at Natick. In these it is rarer to have the pebbles break out under the hammer than for the rock to fracture cleanly through irrespective of pebble and cementing material. Not only is this true, but joints, faults and other fractures pass in surprisingly smooth surfaces impartially through pebble and matrix.

It is suggested, therefore, that the term conglomerate be restricted to those pebbly rocks which break through the matrix and around the pebbles after the manner of sandstones. For the type in which fracture is through the pebbles and matrix, analogous to the conditions observed in quartzite, the term *conglomerite* is proposed. This term is suggested because its similar ending to quartzite should make its usage the more ready. Adopting such a term, we would then recognize the three grades of coarse sediments, gravel, conglomerate and conglomerite corresponding to sand, sandstone and quartzite in the next finer series.

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BANANA STOWAWAYS AGAIN

THE discovery of individuals of the genus Marmosa on stems of imported bananas has resulted in several being recorded from the United States.[1] This note presents another record and comments on the conditions under which the mammals may exist before being discovered as well as upon their food habits and the method of carrying the young.

In March, 1928, the writer was asked to identify a "rat" that had been found on a bunch of bananas. The "rat" proved to be a female opossum, genus Marmosa, with two young firmly attached to her mammae. The species was not *M. isthmica,* with which the writer is familiar, but was, possibly, *M. zeledoni.*

It is difficult to understand how an animal as delicate as these opossums appear to be could withstand the adverse conditions met in such a trip. Granting that the journey from the plantation to the hold of the ship is not very severe, the survival of the young in a hold the temperature of which is held at 57° F. is remarkable, as this temperature is much lower than that encountered in their native habitat. Moreover, the bananas are green and so are not fit for food.

The specimens that came into my hands not only had survived the voyage from Central America to New York City, but the trip to Albany, seven days in cold storage there and finally a trip by truck to Schenectady. The animal was first seen in Albany, but eluded capture. It was found later on a stem of bananas hanging in a ripening room in Schenectady where the fruit had been taken. On capture the mother and young were placed in an empty candy jar where the writer first examined them. After the escape of the female the two young were preserved for dissection.

The point brought out by Kraatz concerning the food habits is of interest, for one species of the genus, *M. isthmica,* appears to do well on a variety of tropical fruits if they are ripe. One specimen kept by the writer starved to death without attempting to eat coconut or fresh sweet corn and without molesting the two young she had been mothering, and which survived her. Others have been kept for several weeks on banana and papaya. Donato, the Indian overseer, assured me that this species dies if not fed ripe banana, and my experience verifies his statement. With this in view, how do the stowaways survive the trip with apparently nothing to eat but green bananas? Is it possible that they find food of some other sort, insects, for instance? The specimen from Schenectady survived two weeks or more; caged specimens in Panama died in a day or two if not fed.

Young observed in Panama still clung to the female after their teeth had developed and they were not nursing. At this stage of development they clung to the female with their mouths, usually seizing the fur on the sides or on the ventral surface.

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[1] SCIENCE, February 24, 1928; April 20, 1928; March 14, 1930.

WHEN BELIEVING IS SEEING—AN OPTICAL ILLUSION

DURING a stormy Atlantic crossing not long ago the writer observed a most striking demonstration of the way in which the eye may be aided, or, as in this instance, deceived, by the sense of equilibrium. The ship had been tossing violently for several days and most of the passengers were confined to their staterooms. A group of us, however, were seated one evening near the head of the main stairway. The opposite side of the lounge, seen across the intervening open space of the stairway, quite obviously rose and fell with the motion of the boat, as we, in the group of observers, alternatingly rose and fell.

After watching the apparent motion in an absent-minded way for some time it occurred to the writer to question it and to endeavor to ascertain how this visual impression of motion was registered. How were our eyes able to gauge the movement? By what was it measured? Motion can be "seen" in any one of several ways, but in each case an adjustment of the eye muscles is involved, and this adjustment defines the character and the direction of the movement. We braced our bodies and chairs against the movement of the boat. Our heads were held rigid and our eyes fixed upon a certain point to avoid any muscular adjustment to actual movement on the opposite wall. In spite of every precaution the wall of the saloon opposite to us still obviously rose and fell, see-saw fashion, as our bodies traveled in the opposite direction.

A careful examination of all visible portions of the room and stairway revealed no moving or swaying objects. The night was inky-black outside, with no sign of a light at sea to mark the horizon. Yet the motion continued to be so "visible" that it was hard to believe that no change of focus was necessary in following it. The conclusion to which we were finally forced was that when our semicircular canals registered motion for ourselves, in a certain direction, our minds, receiving this message, passed on to our eyes a demand for what was logically to be expected of them. They being faithful cooperators obediently "saw" what they were supposed to see at a time when our bodies were being tossed up and down in space. In this case, the thing to be expected was the motion which has been described, of the floor, walls and ceiling of the heaving ship's saloon; so this was what they "saw."

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