

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