fied himself against the cold winter, and with his wife to supervise the domestic arrangements in camp, and three laborers to aid him, he is endeavoring to rapidly extricate the skeletons from the hard sandstone in which they are imbedded. He writes enthusiastically of his work, and in a recent letter says, "We have found what paleontologists have been searching for for the past forty or fifty years, skeletons of sauropod dinosaurs of huge size, apparently absolutely complete, every vertebra in position, and even the ribs in place—not removed more in any instance than two or three inches from the point where they articulate with the facets of the vertebræ." Every precaution is being taken to recover these specimens as they have been found. A photographic record is being kept of the position of every bone, and it is hoped that when the great undertaking is completed a very important addition will have been made to our knowledge of the osteology of the sauropod Dinosauria. One of the interesting features in this connection is the discovery of the sternal ribs, which never have hitherto been found in position in connection with the Sauropoda.

Dr. Percy E. Raymond has been during the past year carrying on extensive researches in the region of Pittsburgh, and has made valuable and interesting observations upon the strata of western Pennsylvania, upon which he will shortly publish, showing the existence of extensive marine faunæ at points where such deposits were hitherto not known to exist. He has also been successful in discovering some new species of invertebrates, as well as the remains of some vertebrates. His studies are calculated to throw great light upon the formations of the region, which have hitherto been only superficially examined.

Two replicas of the skeletons of *Diplodocus carnegiei* were prepared and in the fall of the year were presented, one to the Emperor of Austria, the other to the King of Italy. The first specimen is located in the Imperial Museum at Vienna, the second in the Museum of the Istituto Geologico at Bologna. These replicas were made at the expense of Mr. Andrew Carnegie and presented on his behalf to the Emperor and the King by Dr. W. J. Holland, who, with his assistant, Mr. Coggeshall, set them up. Dr. Holland was personally received by the Emperor of Austria, who conferred upon him the cross of an Officer of the Order of Francis Joseph, and conferred upon Mr. Coggeshall the cross of the Order of Merit, surmounted with the crown. The King of Italy has conferred upon Dr. Holland the cross of Commander of the Crown of Italy, and upon Mr. Coggeshall the cross of Chevalier of the same order. In recognition of Mr. Carnegie's generosity the authorities of the city of Bologna have sent to the library of the Carnegie Museum a complete set of the writings of Aldrovandi, in thirteen volumes in the original binding. The set is singularly beautiful and well preserved. The Istituto Geologico at Bologna has presented to the Carnegie Museum a series of beautiful specimens of the fossil fishes of Monte Bolca, which are being prepared for exhibition.

One of the interesting accessions to the paleontological collections of the Museum during the past year has been an enormous tusk of *Elephas columbi* Falconer, found on the banks of the Allegheny River in the suburbs of Pittsburgh. It was washed out during a freshet. It is nearly nine feet in length.

During the year a beautifully mounted skeleton of *Portheus molossus* Cope, fifteen feet in length, the most perfect in existence in any museum, has been mounted and placed upon the walls.

The vertebrate material obtained and accessed for the museum during the past twelve months is extensive, aggregating many hundreds of numbers, and the invertebrate material is even more extensive.

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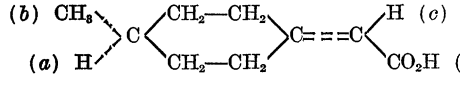
OPTICALLY ACTIVE SUBSTANCES CONTAINING NO ASYMMETRIC ATOM

The statement is frequently made that optical activity is due to the presence in the

molecule of an asymmetric atom—of carbon, nitrogen, sulphur, selenium, tin or silicon. In this form the statement is quite incorrect. As was shown by van't Hoff and Le Bel years ago, the optical activity originates in the enantiomorphous configuration of the molecule, which is conveniently recognized by the identification of a particular atom in the molecule as being asymmetric.

Experimental confirmation of van't Hoff and Le Bel's views has been recently furnished by Professors W. H. Perkin, W. J. Pope and O. Wallach[1] in an extremely valuable and lucid paper which they have contributed to the *Journal of the Chemical Society* (London).

In 1906, Perkin and Pope synthesized 1-methylcyclohexylidene-4-acetic acid,



which contains no asymmetric carbon atom. At first some doubt was expressed as to whether the acid did actually conform to the formula given, but subsequent work has amply confirmed its constitution and it has now been possible to resolve the acid into a dextro- and a lævorotatory modification, by repeated fractional crystallization of its brucine salt.

The racemic acid melts at 66°, the optically active acids melt at 52.5–53°; in absolute alcohol the specific rotatory power $[\alpha]_D$, is 81.4° and −81.1°, for the *d*- and *l*-acid, respectively. When mixed these acids regenerate the racemic acid of higher melting point.

Referring again to the formula given above, if the linkages represented by unbroken lines are supposed to occupy the plane of the paper and if those represented by broken lines lie in a plane perpendicular to the first, it will be observed that the plane which contains the continuous line bonds is not a plane of symmetry of the solid configuration, because the groups marked (*a*) and (*b*) are different. Similarly, the vertical plane mentioned above is also not a plane of symmetry, because the groups (*c*) and (*d*) are of different composition. In short, even when the usual tetrahedral symmetrical configuration is attributed to methane derivatives, the relatively simple acid formulated above is found to possess neither planes, axes nor a center of symmetry, and it is this which determines the enantiomorphism of its configuration.

The original paper will richly repay perusal; it is written in the clear and interesting manner characteristic of Messrs. Perkin and Pope's communications, and it contains a most instructive account of the great experimental difficulties which had to be overcome before this most important work could be brought to a successful issue.

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[1] *Jour. Chem. Soc.*, 95, 1789, 1909.

INCOMES OF COLLEGE GRADUATES TEN YEARS AFTER GRADUATION

THE class of '99, Dartmouth College, has one hundred living members in the following occupations: Business, 25; teaching, 23; medicine, 14; law, 13; engineering, 10; journalism, 2; railroading, 2; farming 2; study, 2; clergyman, 1; chemist, 1; mining, 1; librarian, 1; unclassified, 3.

The class might be called average. Some were poor, and some were able to live comfortably in college, but every one has had to make his own way in his profession. At the decennial reunion last June, and by mail shortly afterwards, reports were received from sixty-seven of the men stating their incomes for the preceding year. The thirty-three from whom no facts were received are probably getting less income than the average of the class, but I do not think they would lower the average greatly.

The results show an income considerably higher than was thought by those whom I have consulted as to the probable income.

Looking at the plots we see that five men get less than $1,000, with an average of $832; fourteen men from $1,000 to $1,500, with an average of $1,209; eighteen from $1,500 to $2,000, with an average of $1,689; thirteen