The use or disuse of this capital initial may not be a matter of much importance, but if there were no rule upon it there would be lack of that uniformity which is so much to be desired. If left to personal choice, some writers would use it and others would not. The British Association Revised Code (1865), the code of the French Zoölogical Society and that of the International Zoölogical Congress leave the matter to individual preference. The code of nomenclature of the American Ornithologists' Union (canon viii.) expressly decides against capitals, although agreeing 'that it is a trivial matter.' The International Botanical Congress of 1867 and the committee of the American Association (1894) agree as to its adoption. Therefore, in addition to the above mentioned reasons, botanists write these classes of specific names with an initial capital for the sake of uniformity in botanical writings.

F. H. Knowlton.

DENSITY AND DIAMETER OF TERRESTRIAL PLANETS.

Recent determinations of the mass of Mercury have brought out a relation between the densities and diameters of the terrestrial planets which have not heretofore been thought possible on account of the supposed great density of Mercury.

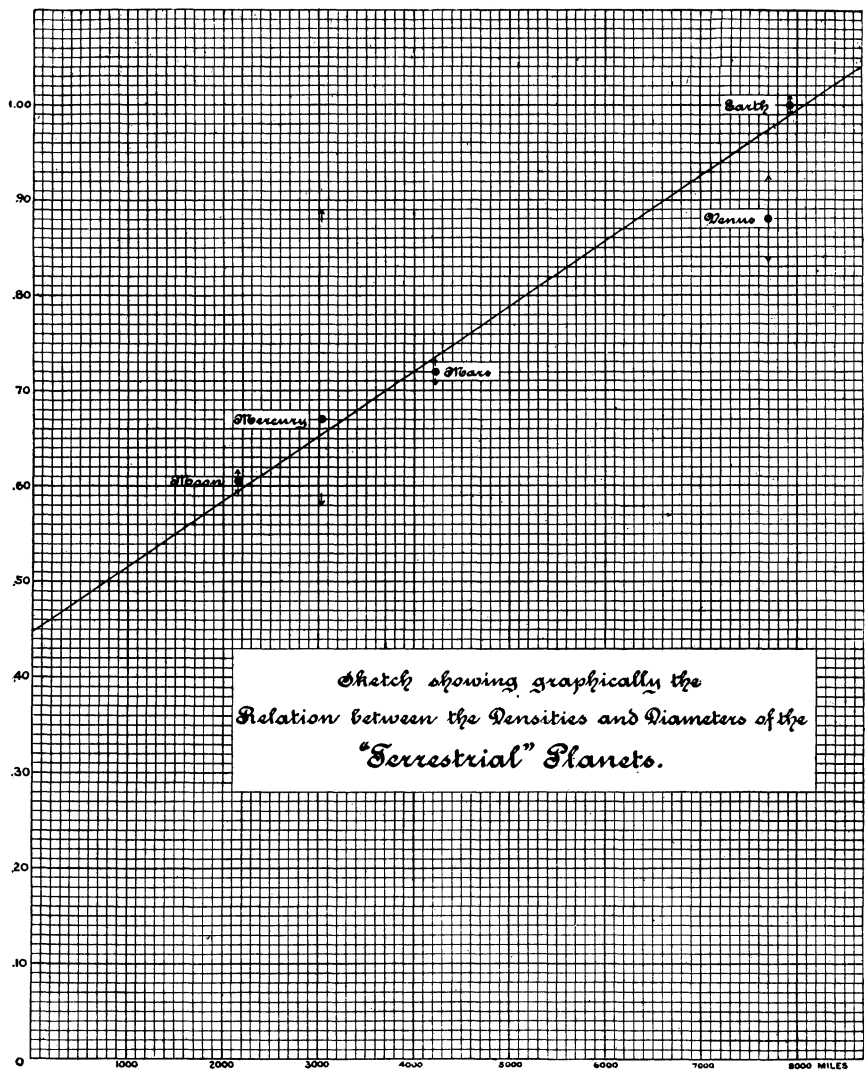
The accompanying sketch shows graphically this relation. The planets have been plotted with their diameters in miles as abscissa and their density, the earth as one, as ordinates. It is seen that these points lie approximately in a straight line. The data has been taken from Harkness' 'Solar Parallax' and Young's Astronomy. The masses from the former and the diameters from the latter, except that the density of Mercury is that lately announced by Backlund from a discussion of Encke's comet.

The probable error of the density has been obtained by combining the probable errors of the mass and diameter, and is shown in the sketch by the arrow-heads above and below the plotted points. It will be seen that the earth, Mars and the moon have much smaller probable errors than Mercury and Venus, since these latter have no known satellites to aid in determining their masses. If the most probable straight line be drawn with respect to the former, it will be as shown in the drawing. This line passes within the limits of the probable errors of all except Venus.

It will be observed that the straight line when prolonged to the left does not pass through the origin of coördinates, but cuts the ordinate at some distance above it. This indicates that a planet with a very small diameter would still have a considerable density. Meteroic stones of small diameter, when they reach the earth, do have a density about the same as that of terrestrial rocks, and this is about the density which is indicated in the drawing.

If this relation should prove to be the true law, then the mass of a terrestrial planet could be determined from its diameter. The mass of Venus so determined would be about one-tenth greater than as given. Venus is the only one of the five that is any more discrepant than might be expected from its probable error. The probable error of this planet as given may be too small. An increase of one-tenth in the mass, or a decrease of one-thirtieth in the diameter, would make Venus accordant. A sufficient increase in her mass would explain the movement in Mercury's perihelion. If the mass of Mercury proves to be as small as now supposed, that is about one-thirtieth that of the earth, it may explain some of his irregularities.

Prof. Young has pointed out that a body 200 miles in diameter near the sun would not be likely to be accidentally discovered, although it might be seen with some of the best instruments during transit across the



Sun's disc. It is, therefore, possible that Mercury may have an undiscovered satellite 200 miles in diameter. If so, and the satellite should be as far from Mercury as the moon is from the earth, it would take 150 days to make one complete revolution around the planet, or nearly twice as long as it takes Mercury to revolve about the sun. Such a satellite would have sufficient mass to cause Mercury to revolve in a secondary orbit 150 miles in diameter, which would be a measurable quantity.

E. S. WHEELER.

SAULT STE. MARIE, MICH.

THE DISTRIBUTION OF THE BLOW-GUN.

THE blow-gun is one of the most remarkable savage devices in which compressed air is used as a motive force. Primarily, the blow-gun is a simple tube of cane, smoothly