of the glacier in 1929, as compared with 1927. In the latter year, a transverse ridge of debris, formerly crevasse filling, was exposed on the ice a few yards back of the ice foot; this ridge, in 1929, is twenty feet or more in front of the ice. The ice near the foot of the glacier seems much more laden with debris than was the case two years ago and there has apparently been a considerable shrinkage in the thickness of the glacier, which has left a residue of numerous rock fragments exposed on the ice surface. No moraine is visible near the line occupied by the ice front in 1927, and this would indicate that the retreat has been continuous and gradual for more than two years. Most of the new deposits have been left as scattered ground moraine, extensively reworked by outwash from subglacial streams.

Since the lower glacier is comparatively small, the figures and other data lead to some speculation concerning its future condition. This is of especial moment since an automobile highway for the convenience of sightseeing has been recently completed to the glacier, at a considerable cost.

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OUTCROP VS. EXPOSURE

IN geologic descriptions of rock units, it is generally convenient if not necessary to distinguish between areas in which a particular formation directly underlies the surface of the ground and those specific points where the formation is visible at the surface as in a ledge. In the majority of stratigraphic descriptions, the terms "exposure" and "outcrop" are used interchangeably for either of the above conditions with the result that the exact meaning of a phrase is often obscure. For example: "This exposure of the shale is directly south of the outcrop of the limestone"; "Cleavage occurs throughout the exposure"; "The main road passes near an exposure of the limestone." Without additional qualifying phrases, it is not at all clear in these sentences whether the term "exposure" refers to a specific visible *exposure* of the rock, or merely to a belt where the formation is the surface bed-rock. Such difficulty of expression can readily be avoided by attaching a definite meaning to each of the terms in question. It would seem to be a decided convenience if geologic authors would consistently use the term "exposure" for points where a particular formation is exposed to view, and would restrict the term "outcrop" to those areas where the formation makes up the bed-rock directly below the surface of the ground. One would thus describe such points as ledges, road-cuts and other bare rock surfaces as exposures, while the area or surface extension of the formation would be described as its outcrop. This restriction of meaning is entirely in accord with the etymology of the two words and should be simple to put into practice. Its use should avoid many ambiguous phrases.

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OCTOBER 27, 1929

ON NEW LAWS FOR THE SOLAR SYSTEM

MY attention has been drawn to an interesting article by Dr. W. M. Malisoff appearing in the issue of SCIENCE for October 4. Reference is made to a law proposed by me, and since his first paragraph may be somewhat misleading I am taking the liberty of clarifying the situation.

It is obvious that the percentage deviations given in my original article refer to the integers and not the *squares* of the integers (the italics are his). This is no correction but a variation in statement. In his section (4) Dr. Malisoff has done precisely the same thing that he condemns in his section (2). Both the laws he states in his sections (4) and (5) follow directly from the law stated by me coupled with Kepler's laws or the law of gravitation, and are subject to the same discrepancies.

Sections (6) and (7) are interesting, and one could wish that the author had given numerical data in support of the laws stated therein.

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CONTINUED GROWTH OF AMERICAN CHESTNUT

THOSE who have followed progress of the chestnut blight may be interested to learn that the grove of trees earlier reported[1] still continues vigorous growth. This grove, located on Chester stony loam in the Piedmont just west of the coastal plain, consists of old trees of twelve to sixteen inches diameter breast high. The trees were earlier blighted and most of the crowns were killed but they have partially replaced the crowns. New growth is distorted by cankers which do not, however, seem to impede development; each year some twigs and branches are blighted but per cent. of killed tissue is small compared with new production. Although most species of nut trees are virtually devoid of fruit this year (1929), the chestnut trees bore a fair crop. On visiting the grove on September 19 the writer found the ground littered with burs thrown down by a squirrel; the burs contained one to three plump nuts, a proportion of which were parasitized as in earlier years by a larva, possibly that of the nut-weevil *Balanius caryatrypes*.

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[1] A. P. Kelley, "Conservation of Our Native Chestnut," SCIENCE, n.s., 63: 476–477, 1926.