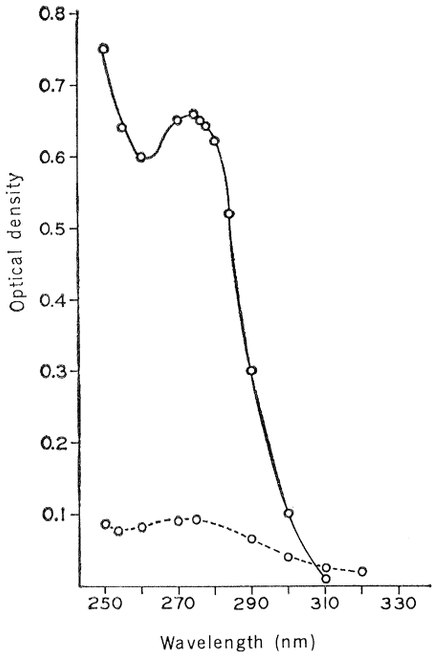

Fig. 1. Absorption spectra of sweat diluted 1:10 in phosphate buffer (*p*H 7.4). Solid line, sweat collected on filter paper; dotted line, sweat collected under mineral oil.

The mean concentrations of urocanic acid in sweat collected under oil and by filter paper are, respectively (milligrams per 100 ml of sweat): 0.76 (range < 0.2 to 1.8) and 5.4 (range 2.7 to 9.6). Secretory rates were comparable. In all cases, sweat collected under oil had much less urocanic acid than sweat which had been in contact with skin.

In an attempt to recover urocanic acid from nonsweating skin, further studies were performed with filter paper (saturated with phosphate buffer) applied to the skin surface. In these studies, amounts of urocanic acid similar to those found in sweat collected on filter paper were eluted both from the skin of volunteers who had been exposed to low ambient temperatures (< 5°C) and from cadaver skin.

These results show that urocanic acid, hitherto thought to be a constituent of sweat, is not a true constituent of sweat, but is a consequence of elution of urocanic acid from the epidermis by sweat. These findings suggest that this phenomenon may account for the presence of other organic compounds reported to be in sweat (*6*).

SAUL W. BRUSILOW
KIMIO IKAI
Johns Hopkins University School of Medicine, Department of Pediatrics, Baltimore, Maryland 21205

References

1. J. M. Vandenbelt, C. E. Child, D. Lundquest, J. Saladonis, *Science* **119**, 514 (1954). A. Zenisek, J. A. Kral, *Biochim. Biophys. Acta* **12**, 479 (1953).
2. B. N. La Du, R. Howell, G. A. Jacoby, J. E. Seegmiller, E. K. Sober, V. G. Zannoni, J. P. Canby, L. K. Ziegler, *Pediatrics* **32**, 216 (1963).
3. H. P. Baden and M. A. Pathek, *Clin. Res.* **13**, 225 (1965).
4. J. Tabachnick, *Arch. Biochim. Biophys.* **70**, 295 (1957).
5. S. W. Brusilow, *J. Lab. Clin. Med.* **65**, 513 (1965).
6. S. W. Hier, T. Cornbleet, O. Bergeim, *J. Biol. Chem.* **116**, 326 (1946).
7. Supported in part by PHS grants AM06278 and 5-K3-GM-7324-08 from NIH.

4 March 1968; revised 22 April 1968

Lunar Soil: Should This Term Be Used?

In past months the authors of several reports which appeared in *Science* (*1*) have used the term lunar soil as a surrogate for a term for the blanket of material that covers the lunar surface. On behalf of all earthbound investigators engaged in research on soils and in geomorphic studies, I feel compelled to remind selenologists (and martianologists, venusologists) that usage of the term soil other than in reference to that of the earth is not in keeping with past and present conventions and is in fact incorrect. Misapplication of the term soil could lead to confusion and may endanger the present usefulness of the term. The practice should be discontinued.

I have recently reviewed three definitions of soil taken from three important reference books on soils. One of the books is old and time-honored (*2*), another is new and in wide use as a college text (*3*), and the third is recognized in North America as the standard reference on pedology (*4*). An examination of these definitions brings to light certain characteristics of soil that, in our present state of knowledge, sets it unequivocally apart from the material which blankets the moon. The characteristics are (i) that soil is a natural body which supports and sustains plants; and (ii) that soil contains —and in part consists of—organic matter, air, and water in variable proportions (*5*).

Thus, until it is satisfactorily shown that the debris blanket on the lunar surface is indeed a natural body which consists in part of organic matter, air, and water and which supports and sustains plants, selenologists should defer using the term lunar soil. Perhaps the term *epilith* (compare with regolith), analogous to epidermis, would be a satisfactory word to mean all loose lunar debris. We would then speak of the lunar epilith, much as we now refer to the earth's regolith, but remembering that regolith includes soil whereas the epilith does not.

The admonition presented here is directed to all investigators of the solar system who borrow earth-conceived terms for soils or geomorphology and apply them when not referring to the earth. In short, space researchers should either use existing terminology properly or begin coining their own terms, as the circumstances demand.

DONALD LEE JOHNSON
Graduate Department of Geography and Meteorology, University of Kansas, Lawrence 66044

References and Notes

1. L. D. Jaffee and R. H. Steinbacher, *Science* **158**, 631 (1967); J. N. de Wys, *ibid.*, p. 632; E. M. Christensen, R. Choate, L. D. Jaffee, R. L. Spencer, F. B. Sperling, S. A. Batterson, H. E. Benson, R. E. Hutton, R. H. Jones, H. Y. Ko, F. N. Schmidt, R. F. Scott, G. H. Sutton, *ibid.*, p. 637; J. A. O'Keefe and R. F. Scott, *ibid.*, p. 1174; M. J. Campbell and J. U. T. Gold, *ibid.* **159**, 973 (1968).
2. E. W. Hilgard, *Soils* (Macmillan, London, 1907), pp. xxiii, xxvi–xxvii.
3. H. O. Buckman and N. C. Brady, *The Nature and Properties of Soils* (Macmillan, New York, 1960), pp. 2–9.
4. Soil Survey Staff, *Soil Survey Manual* (U.S. Government Printing Office, Washington, D.C., 1962), pp. 6–8.
5. For a perceptive and comprehensive discussion of the nature and origin of soil, see C. C. Nikiforoff, *Science* **129**, 186 (1959).

1 March 1968

Photographic Sky Coverage for the Detection of UFO's

The following estimates were made in connection with my course on "Flying Saucers" (*1*). Over a period of 20 years, during which there have been at least 11,000 visual sightings of unidentified flying objects (UFO's) in the United States, no astronomical photograph has recorded one (*1a*), even though artificial satellites, meteors, and asteroids are frequently noted. In nighttime sightings, UFO's are usually quite luminous; the question is, what frequency of random UFO tracks could be missed by astronomical telescopes now in use.

Each telescope used photographically covers a solid angle ω for an average exposure time t and obtains an average of N photos per year. The photos are usually taken with-