This deduction seems to be supported by the fact that legumes when inoculated will grow in the raw subsoils, whereas the non-legumes will not. That legumes will not grow on subsoils of humid regions as is claimed by Alway, McDole and Rost is not, so far as I am aware, proved. In any case their claim that the failure of such inoculated legumes to develop on humid subsoils "is to be attributed to a lack of availability of the phosphoric acid or of the potash or of both," appears to be an assumption which is unsupported by fact. Data on the content of water-soluble phosphoric acid and potash in subsoils of humid regions give no indication, so far as the writer is aware, of a paucity in those respects which would at all account for the total failure to develop manifested by the inoculated legume plants mentioned above. If inoculated legume seeds do fail to develop on humid subsoils, such failure must be accounted for, it would seem, on other grounds than those proposed by Alway, McDole and Rost.

It may also be added here that Hilgard's explanation for the "rawness" of subsoils is probably neither correct nor necessary. One is not obliged to assume a washing down of fine clay and silt particles from the soil into the subsoil to account for very imperfect aeration in the latter. Indeed, the sands of nearly uniform texture for several feet in depth, which are common in California, exhibit similar rawness in the subsoil, to that of the loams and clays which are underlaid by almost impenetrable silty clays.

SUMMARY

1. Subsoils of arid regions are certainly no less "raw" than those of semi-arid regions, and probably only slightly less so than those of humid regions.

2. If, as seems as yet unproved, inoculated legume seeds fail to develop on humid subsoil material, such failure can not justifiably be attributed as is done by Alway, McDole and Rost, to a lack of available phosphoric acid and potash.

3. A lack of available nitrogen probably is sufficient to account for rawness of subsoils.

4. The poor aeration of subsoils which indirectly results in their rawness, may be accounted for more simply than by Hilgard's explanation of the washing down of fine particles into the subsoil, which prevents proper aeration.

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NORTHERN LIGHTS

To the Editor of Science: Readers of Science will be interested to note the following observation of the northern lights. We noted them here on the evening of August 9 at about 8:45. They extended across the sky from northwest to east by northeast. They appeared as streaks, not very wide, and there was little or no flickering. A diffuse glow in the sky was more evident than the streaks. The night was clear and bright, so that this may account for the fact that they were not very prominent. They seemed to extend from 40° to 70° in height. At 9:35 P.M. they were still visible, but shortly after 10 there was no trace of them.

The northern lights, of which so many accounts were published in Science about this time last year, were observed here also, although I do not recall that any one reported the fact.

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THE NEW MOON

To the Editor of Science: In making some computations last March about the occurrence of New Moon, an error of statement was discovered in the 9th edition of the Encyclopædia Britannica under "Calendar," Vol. IV., p. 594, and repeated in the 11th edition, Vol. IV., p. 993; it is also given in Barlow & Bryan's "Mathematical Astronomy," p. 215. The erroneous statement is that New Moon occurred on January 1 in 1 B.C. New Moon in January, 1 B.C., occurred on January 25, 12^h 26^m Jerusalem Mean Civil Time.

Otto Klotz
Dominion Observatory,
July 31, 1917