and would thus have been led to provide for the reasonable use of the instrumental equipment as fast as it was put in place on the mountain. The failure to make such provision constitutes the chief point of unfavorable criticism on the part of astronomers, and is in many respects unfortunate; but sundry advantages also have arisen from it, which may be recognized with more profit, particularly as this condition of things must remain unalterable until the great telescope is completed, and the entire institution comes under the administration of the University of California, in full accord with the terms of Mr. Lick's bequest.

Five years ago no one could have anticipated that the year 1886 must pass with the great telescope still unfinished. It is worthy of note, however, that, while the delay in obtaining the necessary glass for the objective has proven so great an embarrassment to the work of the opticians, it has not as yet sensibly impeded the progress of the construction of the observatory itself. To this fact we alluded at page 377 of the current volume of *Science*, stating as well the very reasonable grounds for the belief that the plans of the Lick trustees, in so far as they pertain to the construction of the great telescope and the conjoined observatory, will be completely executed at the close of the year 1887. With its unparalleled instrumental equipment, and an unusual endowment for the prosecution of astronomical research; located where the sky is cloudless most of the year, and at such an elevation as to be above the clouds a great part of the remainder; and situate in a region, too, where the steadiness of the air permits astronomical measurement of the highest precision to proceed uninterruptedly throughout the entire night for months at a time, — the Lick observatory is destined, under prudent management, to take its place at once in the foremost rank; and, although it is the first established mountain observatory, it may well expect to hold its own in the emulation of similar institutions which may subsequently be inaugurated at greater elevations.

LETTERS TO THE EDITOR.

**** *Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

A new standard cell.

Since October last I have made some experiments on the zinc-alkali-copper oxide cell with a view to determine the practicability of some modification of it.

The fact that copper and iron, and perhaps some other metals, dissolve in potassium (or sodium) hydrate when used as cathodes, suggested to me the possibility that the formation of the alkaline cuprate might occur at a definite and practically convenient difference of potential between the electrodes immersed in the alkaline bath. As a matter of fact, I find that a cell mounted with amalgamated zinc, potassic hydrate, and metallic copper, gives, when charged until a blue color appears, a deflection of a hundred and seventy divisions on the scale of a Thompson galvanometer; the Daniell, mounted with saturated zinc sulphate and copper sulphate, giving a hundred and fifty-six divisions. The zinc-alkali-copper cell is joined by a double key to charging-cells and to the galvanometer, a resistance of over nine thousand ohms being included in the circuit of the latter.

The proper shunt is, of course, employed. This deflection of a hundred and seventy divisions seems to be invariable, and the cell experimented upon promises to be a desirable practical standard of electromotive force. Its excellence appears to consist in the fact that the cuprate produced breaks up before it diffuses to the amalgamated zinc, depositing oxide of copper, which settles. The zinc is suspended about an inch above the copper, — which is a spiral ribbon, exposing about two square feet of surface, — and the resistance is less than an ohm. I have used a ten-per-cent solution of 'depurated' potassic hydrate. After some trials, it is found that the shifting of the cell from the charging source to the galvanometer circuit may be done leisurely, as the electromotive force does not seem to begin to fall off for some minutes. Further testing of the effect of changes of temperature, strength of solution, etc., is in progress. Thus far, the temperature of the cell has been allowed to vary very little, not enough to affect the readings. I offer this preliminary note as of possible interest to your readers. This type of cell would be admirably adapted to furnish any desired multiple of its electromotive force.

F. C. Van Dyck.
Rutgers college, New Brunswick, N.J.
June 13.

Real and imaginary Americanisms.

Your correspondent, whose identity is perhaps scarcely concealed by initials, is quite right in saying (*Science*, June 5, 1885, p. 454) that the peculiar use of 'get' in Sir William Thomson's lecture is not an Americanism. But he is not equally correct in his remarks concerning 'would' and 'should.' It is true that speakers in the west of this country are apparently unable to use these words as they are used by writers of classical English, but the same peculiarity is one of the most marked characters of the English of Scotland, as shown in the current burlesque of it: 'I will be drowned, and nobody shall save me.' The confusion may be reaching England, as your correspondent remarks, but not from America. Sir W. Thomson has not 'caught the prevalent epidemic:' it was doubtless born and bred in him.

E. W. C.