faction of all immediately concerned, and to the instruction and guidance of others. The remedy for the excessive love of money would be found in the substitution of other and higher objects of ambition. This could not be expected at this stage of our nation's growth, but it would come with greater maturity. This age, he said, was the seed-time, and not the harvest; nor could the full corn appear until after the intermediate stages of the blade and ear.

## *THE PRESENT SUN-SPOT MAXIMUM.*

AT p. 72 of the second volume of this journal, the observations of the solar spots, made during the previous six years by Professor Todd, now of Amherst college, were collated, and the inference drawn that the present maximum of spots had already passed at the middle of the year 1883. The remarkable solar outbursts, occurring at intervals throughout that year, and the continued manifestation of spot-activity during the present year, have led to renewed discussion of this subject abroad, where very different views are held by the leading authorities in solar physics. Dr. Wolf of Zurich inclines to the belief that we have not yet the data for determining accurately the epoch of maximum; much the highest *monthly* maximum having occurred in April, 1882, while the relative number expressing the spot-prevalence for the year 1883 is easily seen to be greater than that for the year previous. Faye thinks the maximum undoubtedly past, and regards the spottedness during 1883 as "just such secondary maxima as 'might well occur in the progress of a periodic phenomenon which passes rapidly and without hesitation from a minimum to the following maximum, but which passes gently by a series of secondary oscillations from the maximum to the following minimum,' as it is well known the solar spots do." Wolf states, that in 1882 there were no days without spots, while there were four such in 1883. Tacchini of Rome concludes, from the spot-observations of 1882 and 1883, that the solar activity has been on the increase during the latter year: "for, although the difference in the number of spots is very small, the number of groups in 1883 has been very much greater, and the extent of the spots has been truly extraordinary: it has been double that of 1882."

Dr. Spoerer of Potsdam calls attention to a question regarding the numbers, and positions on the solar surface, of the spots observed during the past thirty years. While it has long been recognized that the spots are most numerous, not at the solar equator, but in zones of solar latitude about 15° to 20°, Spoerer's discussion emphasizes the fact, "that, from the time of one minimum until the next, the region of greatest spot-frequency gradually drifts downward from the zone 30° to 25°, to the immediate neighborhood of the equator, and that about the time of maximum its seat lies about 17° or 18°. As the next minimum period is approached, spots more than 15° from the equator gradually become rarer than spots of 35° latitude and upwards were at the time of maximum. But directly the time of minimum is past, spots begin to appear again in those higher latitudes where but very few, perhaps not a single one, had been seen for several years." As justly remarked by the editor of the *Observatory*, this law of sudden transfer of spot-activity from one zone to another is one of the most striking revelations of solar research, and must be accounted for by that theory of spot-periodicity which would be accepted as satisfactory.

Regarding the determination of the present spot-maximum, the same writer observes, that the chief difficulty lies in a variety of opinion regarding what class of data is to be accepted as affording the true index of the state of solar activity. The unusual magnetic perturbations have occurred in coincidence with "the appearance or rapid development of some single spot or group of spots of abnormal extent," and not at the same time with the existence of great numbers of small spots. It would appear, thus, most likely that the total spot-area, rather than spot-numbers, should be taken as the true index.

## *GUYOT'S VIEW OF CREATION.*

*Creation; or the biblical cosmogony in the light of modern science.* By ARNOLD GUYOT, LL.D. New York, *Scribner's Sons*, 1884. 16+139 p., 9 pl. 16°.

THE great eminence of Professor Guyot in several departments of science is a guaranty that what he writes is worthy of attention. The singular simplicity and clearness of his style make what he writes interesting. But, more than all, the earnestness, the truth-loving sincerity, and deep devoutness of the man, in all he wrote, or said, or did, take captive the reader, or hearer, or companion, and bear him along by the force of sympathy. There has been no teacher in this country who has inspired his classes with deeper personal love, or profounder reverence. To us who knew him well, his very presence was a benediction. It is hardly necessary to say, therefore, how deeply and sincerely we sympathize with the devout spirit which pervades this his latest book, and the noble aim of the author in publishing it. Surely, if we must have reconciliations of this kind between the geological record and the Mosaic cosmogony, this one is the noblest and the most rational which we have yet seen. If any one's declining faith still requires such *tonic*, we most cordially recommend this one; but it has long seemed to us that a *complete change of air* is the better, indeed the only, remedy. We believe that the time is rapidly approaching, if it has not already come, when the whole subject must be looked upon from a different and higher point of view. We have ourselves, in earlier years,