work of astronomical observation. It is as if we had no star-catalogues better than those of Sûfî and Ulugh Beg; or as if those astronomers had done nothing but make servile transcripts from Ptolemy.

We cannot leave the book without calling attention to the perspicuous and valuable discussion of the Sothic cycle. Some of the chapters upon the religion, on the other hand, seem to us, we must say, to push theorizing further than good sense can go.

58 (12 April 1894) 278

The Monism of Man; or, The Unity of the Divine and Human.
By David Allyn Gorton, M.D. G. P. Putnam's Sons. 1893.

Genetic Philosophy.
By David Jayne Hill, LL.D. Macmillan & Co. 1893.

CSP, identification: MS L 159.61. See also: Burks, *Bibliography*.

David Jayne Hill (1850-1932) graduated valedictorian from Bucknell University in 1874 and five years later became president of that school. In 1888, Hill left that position to become the second president of the University of Rochester. He was appointed assistant secretary of state by President McKinley in 1898.

Numberless men write about philosophy without dreaming that any further qualification is necessary than having read a quantity of books on the subject and having something they would like to say. Not desultory reading, but hard, systematic study, with accurate reflection, with continual comparison of one's own ideas with those of the strongest men, to see if one's own are capable of improvement in definiteness and force, and this training carried on for at least half-a-dozen years steadily, are the minimum requirements for enabling a man to address the philosophic world without making himself a nuisance. When this point has been reached, if the philosopher will only take the time to write his book short, saying what he has of new to say in the smallest compass in which it can be stated with perfect clearness, he will earn the benedictions of his readers.

Both the above volumes contain eclectic hodge-podges drawn from authors of various merit, but mostly weak. The writers display a charming unconsciousness of the problems their originals had in mind, and frequently quote passages whose real significance they quite miss. Each has been reading and thinking, not altogether without good sense, until he has collected a bookful of reflections of no value, which he now inflicts upon the public. Dr. Gorton, though a medical man, quotes Eduard von Hartmann as authority for a fact of physiology. He speaks disrespectfully of Hahnemann, as "a peer among peerless physicians"—unless this is meant to convey a compliment. After an inconsequential chapter on "The Unity of Divine and Human Agency," he gives two replies to himself, one signed *Scientist*, the other *Theologus*, both in his own incomparable style of thought and diction, peers of his peerlessness, and then replies to them, signing his reply *Radicus*. If he had made it *Radiculus*, it would have come somewhere near a real word and an appropriate one.

Dr. Hill is president of the Baptist University of Rochester, and as such is entitled to be treated seriously, though we must seriously say he sheds no lustre upon

his institution by writing about matters which he does not understand. Thus, he seems to imagine that the discovery of Neptune is somehow to the credit of "Bode's law," although that "law," which good logic never would have admitted, was finally exploded by the violent violation of it in the case of Neptune. The only thing it had to do with the discovery was to suggest that the planet might be found in a place very remote from that where it was found, and thus probably to cause Leverrier to overlook the possibility of the perturbations of Uranus by Neptune being of the unusual kind which it turned out that they were. Though we have only space for this instance, there are plenty of other proofs of Dr. Hill's incompetence to treat of his subject. It is a pity, because the title of his book and those of several of the chapters are decidedly appetizing. But we can find nothing in it of any value.

58 (19 April 1894) 299

An Elementary Treatise on Fourier's Series and Spherical and Ellipsoidal Harmonics.

By William Elwood Byerly. Boston: Ginn & Co. 1893.

Lectures on Mathematics, delivered in August and September, 1893, at Evanston, Ill.

By Felix Klein. Reported by Alex. Ziwet. Macmillan & Co. 1894.

CSP, identification: MS 1391b (draft). See also: Fisch, *First Supplement*.

Aside from possessing a gift for the verbal expression of what Peirce recognized as a difficult subject, William Elwood Byerly (1849-1935) also possessed great foresight as an educator. He graduated A.B. from Harvard in 1871 and two years later received his Ph.D. there — the second such degree awarded at Harvard. Byerly held a professorship in mathematics at Harvard for many years and, upon his retirement in 1913, was made professor emeritus. Among his many significant achievements, Byerly is remembered as one of the first members of the Harvard faculty to give courses to women when the Harvard annex (later Radcliffe) was founded in 1879.

Notwithstanding its name, so redolent of Helicon, there is mighty little poetry in Spherical Harmonics. The blessed, after a thousand years' performance on harps, may possibly betake themselves to setting one another problems in modern geometry; but to spherical harmonics we may confidently assert they will not resort. This subject might be called the conveyancing of mathematics, since it teaches how to express facts in a form which, though it affords no insight into causes or essences, but on the contrary is blind and bewildering, is for all that quite indispensable for making the mathematician master of his data. The usual problem is this: A certain quantity has a value at every point of some surface—most usually, that of the earth. This value—it may be elevation above or depression below the sea level, or the distance of the sea level from the centre, or the force of gravity, or a magnetical constant, and so on—has been ascertained at many points, and is assumed to vary continuously. (Most experts will say no such assumption is made.) Then, spherical harmonics shows us what we may presume to be the approximate values at points where the quantity has not been observed. Moreover, it affords a general expression for the value; still further, it shows how to cut up the quantity into parts,