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NEXT month Principal G. R. McGee will begin his reports of Col. Parker's lectures.

Our book notices have been crowded out this month. Next month, however, will contain full reviews of quite a number of important books now on hand.

IN our report of the proceedings of the twenty-third annual meeting of the Tennessee State Teachers' Association, we omitted the clause relative to the appointment of the committee on By-Laws. The clause reads: "President Paine appointed the following committee on By-Laws: Supt. Frank M. Smith, Prof. Frank Goodman, Hon. Turner S. Foster."

PRIZE COMPETITION.

WE give below the report of the committee appointed to examine the several lists and award the prize in the Prize Competition. It will be seen that the prize is awarded to Prof. C. L. Hays, of Tucker's Cross Roads, Wilson county, Tenn.

NASHVILLE, TENN., Sept. 17, 1887.

To the Editors of the Southwestern Journal of Education:

We, the undersigned, having been requested to act as a committee to examine and compare the various lists of school text-books which have been sent in by the competitors for the JOURNAL's prize, submit the following report:

There were a goodly number of lists, representing the States of Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Kentucky, Michigan, Arkansas, Louisiana, and Texas. Having carefully examined each, and compared all, we find that the following books have received the largest number of votes.

McGuffey's Readers (Revised),
Ray's Arithmetic.
Maury's Geographies.
Eclectic Geographies.
Spencerian Copy-Books.
Barnes' Histories.
Swinton's Spellers.
Reed & Kellogg's Grammars.
Ray's Algebras.
Steele's Physiology.
Steele's Philosophy.

In the case of the geographies there was a tie, each of the two above named having received the same number of votes. The individual list approaching most nearly to the above was prepared by Prof. C. L. Hays, Tucker's Cross Roads, Wilson county, Tenn., and contained eight of the ten books selected, missing the history and algebra.

Respectfully submitted,

W. S. GRAHAM,
M. M. ROSS,
M. T. EDGERTON.

THE TEACHER A STUDENT.

IT is the business of a university to advance knowledge; every professor must be a student. No history is so remote that it may be neglected; no law of mathematics is so hidden that it may not be sought out; no problem in respect to physics is so difficult that it should be shunned. No love of ease, no dread of labor, no fear of consequence, no desire for wealth will deter a and of well-chosen professors from uniting their forces in the prosecution of study. Rather let me say that there are heroes and martyrs, prophets and apostles of learning, as there are of religion. To the claims of duty, to the responsibilities of station, to the voices of enlightened conscience, such men respond, and they throw their hearts into their work with as much devotion, and as little selfishness, as is possible for human nature to exhibit. By their labors knowledge has been accumulated, intellectual capital has been acquired. In these processes of investigation the leading universities of the world are engaged.

This is what laboratories, museums and libraries signify. Nothing is foreign to their purpose, and those who work in them are animated by the firm belief that the advancement of knowledge in any direction contributes to the welfare of man. Nor is research restricted to material things—the scholars of a university are equally interested in all that pertains to the nature of man, the growth of society, the study of language, and the establishment of the principles of intellectual and moral conduct.—*Daniel C. Gilman.*

WE exhort you, then, not only not to neglect the study of letters, but to devote yourseles to them with all your power. —*Charlemagne.*

to minds less cultivated and developed than their own, and when they presume to address the young, they seem to forget that every child is not forty years old. Their addresses never reach their hearers, but sail away above their young understandings.

On the contrary, it is said of the renowned John Wesley, that he was able to address children for fully half hour in monosyllables; and a contributor to *Scribner* says that Hemholtz, physicist in Berlin University, "has been known to spend an hour or more with one student trying to elucidate some subject, sometimes even forgetting his lecture hour; but the most abstruse and involved theory becomes as simple as the multiplication table before he is through with it."

This peculiar quality of address, enabling the speaker to reach the understanding of the hearer and to help it grasp, as it were, a mystery, is, in the majority of cases, a gift of nature. True, it is sometimes acquired, to some extent, through labor and experience, but by the few, and fortunate is he who knows that he does or does not possess this quality, and is permitted to look into the future and see whether success will likely attend him in this vocation, or that nothing but failure awaits him. It is his privilege to launch out with the tide of his inclination. His earnest efforts speed him on in his course. A life of continued regret and ill success is unknown to him. He lends favor to his work and enjoyment attends it, and in mature life he serves as an example of attainment as nearly perfect as is in the power of man to reach.

AN OUTLINE OF PLANE SURFACES.

I. Bounded by *straight lines*—Polygons,—
- 1). *Triangles:*
  - 1. As to *Sides*,—
    - 1. Scalene,
    - 2. Isosceles,
    - 3. Equilateral,
  - 2. As to *Angles*,—
    - 1. Right,
    - 2. Oblique,—
      - 1. Obtuse,
      - 2. Acute,
  - 3. Equiangular.
- 2). *Quadrilaterals:*
  - 1. Parallelogram,—
    - 1. Right-angled—Rectangle and Square.
    - 2. Oblique-angled—Rhomboid and Rhombus.
  - 2. Trapezoid,
  - 3. Trapezium.
- 3). *Pentagon*, *Hexagon*, &c.

II. Bounded by *curved lines*,—
- 1. Circle, Ellipse, &c.

III. Bounded by *curved* and *straight lines*,—
- 1. Semicircle, Segment, Sector, &c.

IV. Remark:
- 1. The limits of Plane Surfaces are the *Triangle* and the *Circle*; the triangle being bounded by the least number of sides possible, and the circle by the greatest number; viz, an infinite number.— *The Fountain.*

"SHALL OUR CHILDREN STUDY NATURAL SCIENCE?"

JULIA MCNAIR WRIGHT.

An acquaintance with a number of young men of unusually fine mental, moral and physical qualities, led me to consider whether there is any direct connection between these enviable characteristics, and the favorite pursuit of these young men—natural science.

After more than a casual examination of this question, I conclude that natural science affords one of the best fields for mental training. This pursuit especially develops the faculties of observation, comparison, and deduction; it incites to carefulness of reasoning, thoroughness of research, accuracy in detail; and cultivates the love of the beautiful and symmetrical. But the study of natural science seems equally well adapted to cultivate the moral nature. It fosters reverence for life in all its manifestations, and for creative power. It nourishes sympathy and lofty ideals, and fills the mind with interests which displace lower and meaner pursuits.

In reading the biographies of leaders in the study of nature, we are struck by the harmonious beauty of the character of such men, as Cuvier, Humboldt, Guyot, Agassiz, and many more.

As the young lover of nature has in him little or nothing in harmony with the idler in the streets, or the hanger-on at frivolous places of amusement, or the barbarian at the prize fight, or cock-fight, the bar-room or saloon, so he finds these grosser spirits flying from the fair face of his Egeria, and bearing him in peace to his pursuits. Some such love as this must be that fabled of Numa, who, instead of mingling with the stormy throng of Roman youths and fathers, rose above them, by thought and study in Tiburnian solitudes.

A taste for natural science, leading to absorbed and delighted reading of books on the beloved theme, leaves neither time nor inclination for dangerous reading, with all its fatal effects—leaves also no burdensome idle hours, for a book, a microscope, a natural object, or a nature-loving friend, will be ever at hand, and fill that mental vacuum which nature abhors, and mischief may fill.

In hours of disappointment, sorrow, heart-sickness, loss, revolt against the evils of our time, when some may fly to dangerous indulgences to drown care, the lover of nature will turn to the unvexing companionship of mountain, forest, shore, wayside or stream, as a child flees to the arms of its mother. And this very necessity, entailed by these pursuits, of seeking nature in all her moods and phases, calling her votary out into the sun and air, over long stretches of unpainful, almost unrealized distance, is that which makes this study of natural science a foundation of health to the body, as well as of strength and joy to the mind.

That which the athlete gains by striving simply to be athletic, the student of nature gains—her bounty, when he follows her banner.

A wiry enduring strength, easy digestion, cheerful spirits, and longevity, mark to an unusual degree the devotees of these favored sciences.

The late and present Dukes of Argyle have been enthusiastically addicted to these studies, and have written valuable works on natural science. The father of the present Duke owes his tablet in Westminster, not to his long line of ancestors, or to his immense estates, but to his achievements in scientific pursuits.

The noblest laurels of this line have been gathered not in the field of hereditary accident, but of honest endeavor. How early then shall our children begin to study what is mentally, morally and physically so helpful? How early shall we begin to cultivate a taste in them for such ennobling research? Shall we wait until other tastes are formed, which shall antagonize this, or pre-occupy the mind to the exclusion of this? Is it not better to pre-empt the infant mind in favor of what shall be to it such a crowning heritage? Earliest impressions and preferences are likely to remain paramount —why should not the opening mind receive instead of platitudes, absurdities, sound with little or no sense, the marvels and beauties of creation, the fairy-land of the real, the wonders of animated nature? "Let me," says one, "write the popular songs of a people, and who will may make their laws." Let who will write the text-books for the young men and maidens—who truly shall sway the thought and direct the taste of the coming generation, till he who shall in simple sincerity, go into our nurseries, and kindergartens, and primary schools, with the story of nature; who shall write the face of our fields with the daily miracles of life and growth; who shall give a tongue to the whirr of insects and the rustle of the leaves; who shall present to the child-mind the mystic key that shall unlock the history of the flower, and shall reveal to the child eyes that world of amazement and admiration; its peopled life, its solitary homes, its crowded cities, that lie within the wide world that is hardly revealed even to our careless glances.

EASY GEOLOGY.

T. C. KARNS, KNOXVILLE, TENN.

GEOLOGY is the science which tells us of the structure of the earth and how it came into its present form. The earth reached its present condition only through very slow changes. In fact, it has never been in a stationary condition, as many people suppose, and probably never will be. Changes are yet constantly taking place and will continue to take place. Water, air, heat, cold, volcanoes and earthquakes are constantly modifying the surface and structure of the earth.

I have said the earth was not always as we now see it. Scientists, with good reason, tell us that all the matter which now composes our globe once existed in a gaseous state. The sun, with all its family of planets, was then an inconceivably large body of gaseous matter rolling in space. This was "in the beginning," when "the earth," as we are told by the inspired penman, "was without form and void." This vast rolling mass was billions of miles in diameter. The matter at the outside was so very far from the center that even the slowest revolution at the axis would cause immense velocities at the circumference and result in throwing off large masses which would, through the common attraction of its own particles for each other, assume the globular form and revolve as planets around the parent mass. Another theory is that rings of matter like those around Saturn were at first formed and separated from the parent mass and that finally these broke up and assumed the spherical form. The rings of Saturn testify in favor of this theory. The outer planets of our solar system were, of course, thrown off first. Neptune is the outermost planet, as far as we know, and therefore is the oldest. The next thrown off was Uranus. Then followed Saturn with his bright rings. After this came Jupiter, the largest of the family. About two hundred small bodies, called the Asteroids, came next. It is thought by some that these all came off in one mass, which in some unknown way became broken into fragments. The next inner planet is Mars, a body very much like our earth. Our own world followed, and after it Venus. The last is the little planet Mercury. A still younger planet called Vulcan has been claimed to have been seen, but the truth of this has not been well authenticated. The sun is the parent mass, which continued to shrink and solidify as the successive planets were thrown off. Three of the planets, not counting the Asteroids, are smaller than the earth and four are much larger. The detached planets were, of course, at first gaseous. As they parted with their heat, contraction went on and they passed from the gaseous to the liquid form. In process of time the liquid cooled and a solid crust began to appear. At first there were spots, just as we see in the sun to-day. The larger masses cooled very slowly. Jupiter is supposed to be yet exceedingly warm, though older than the earth. When the crust had formed and the heat had been sufficiently reduced, life began to appear. The cooling process occupied countless ages of time. As the body continued to cool, it naturally shrank in size. This made the crust too small, and wrinkles appeared. These wrinkles are the mountains of our world. At first earthquakes, or upbreakings of the crust, were constant, widespread and fearfully destructive. As the crust became more solid the disturbances were less frequent and of a slighter character. The cooling and shrinking process is still going on, as the earthquakes of the present day attest. The volcanoes show us that molten matter still exists in the interior. The sinking of mines and artesian wells also shows that after a certain depth the heat gradually increases. At one hundred or more miles below the surface everything is, perhaps, still in a state of fusion. The cooling process will continue till all the heat has been expended and the whole mass is solid.

Many of the planets, while yet in a gaseous state, after parting from the central mass, themselves threw off from their circumference a part of their own matter, and thus formed secondary planets, or moons. The earth threw off one such body, which is our moon. Jupiter has four such moons and Saturn eight. Other planets have fewer. Some have none. The moons are grand-children of the sun. No secondary planet is known to have thrown off any matter.

Time in geology is exceedingly long. It can not be estimated in years. We can only speak of periods and countless ages. The time when man came upon the earth may be spoken of as but yesterday. The first appearance of the lower forms of life was so much earlier that we can scarcely conceive it. This period, in turn, shrinks into nothingness when compared with the time during which the earth was a molten mass. The gaseous period must have been even more extensive by almost infinite cycles of time. It was indeed "In the beginning" that "God created the heavens and the earth."

[*Continued next month*].