

sizes can be bound together. Detailed reasons for this choice of distances may be found in my article entitled 'Standard covers for temporary binding,' in the *Library Journal*, Jan., 1883, viii. 6, 7.

Covers for these pamphlets are punched with holes in the hinge or flap at the same distances, so that all covers fit all pamphlets. One or one hundred pamphlets can be inserted in a cover. The backs are made of heavy manila, as wide as the thickness of the book, with a margin folded over to be punched with holes, so that the back is laced between the pamphlets and the cover. By lacing the backs to the covers first, with thread or otherwise, and then inserting the pamphlets on a separate cord, the covers do not fall away when the binding cords are withdrawn. Of course, if desired, the backs can be glued to the covers.

One objection to Mr. Goode's method of having stubs permanently bound in the covers is, that no such re-arrangement can be made as may be desired. The backs are also of definite width, and cannot be enlarged as may be required for convenience. A pamphlet cover made as I recommend, if not tightly laced, will admit of laying in 50 per cent more pamphlets than are tied in, before it is necessary to re-bind.

If for any reason it is desired not to mutilate a pamphlet by making holes in it, it can be glued to a stub, or placed in an envelope glued to a stub, and the stub can be perforated.

Manila sheets can be prepared by the thousand, perforated with the standard holes, and newspaper scraps, etc., mounted upon them as desired, and these bound with the pamphlets. By pasting only on the recto, and marking the guide words or symbols on upper left-hand corner of verso, these words or symbols can be readily caught by the eye as the leaves are turned. When scraps occupy more than one sheet, the several sheets can be glued or tied together, so that they may afterward be handled as units. It will be found better in the end to put but one scrap on a sheet, so that the sheets may index themselves in the arrangement.

Next as to the arrangement and classification. The Dewey decimal classification and relative index is pronounced by many of the foremost librarians to be the greatest invention of the century in library economy. Its applicability ranges from that of assisting the school-boy to keep his notes to that of the president of the Royal astronomical society in classifying his library. Its simplicity is that of the Roman alphabet and the Arabic numerals; its comprehensiveness is that of assigning a subject number, for instance, to the 'spherical excess in the computation of a triangulation in geodetic work,' viz., 52,641; or separately indicating 'songs for male voices' (78,487), and 'songs for female voices' (78,488). Its index, in the new edition just issued, contains nearly 9,000 topics, and three tables allow these topics to be developed fully one hundred fold without loss of simplicity. One reference usually suffices to find the subject number of a topic, and by it a set of ten manuscript notes could be marked so that they need not be marked over to locate them in a library of ten thousand volumes, for the symbols would indicate not only what they were about, but where they were.

The use of this system can be seen in my own library and manuscripts, or in the catalogue I am making of the books and pamphlets in the entomo-

logical division of the U. S. department of agriculture. A description of the system is given in chapter xxviii. (pp. 623-648) of the special report on libraries published by the U. S. bureau of education in 1876.

I pay about one cent each for my pamphlet covers, octavo or quarto. They are serviceable, but not elegant, but they hardly show on the shelves.

B. PICKMAN MANN.

Star catalogues.

Would you please tell me where I could obtain a catalogue of the stars, and what would be the cheapest price I would have to pay?

H. C. I.

[If our correspondent would state a little more definitely the use for which the catalogue is desired, we should be glad to give the necessary information. A great number of star catalogues are published, no two just alike. The star list of the *American ephemeris* (to be obtained from the office of the *American ephemeris*, Washington, price \$1) would perhaps answer his purpose; while, for identifying the constellations, etc., Heis's *Atlas celestis novus* would probably be found most useful; and Webb's 'Celestial objects,' giving a valuable list of colored stars, nebulae, clusters, etc., should be owned by every one that possesses an astronomical telescope. — Ed.]

Calendar reform.

I notice in the supplement to No. 140 an article on reform in our calendar, by Mr. Paul. He refers to two changes in our method of reckoning time proposed by M. Jules Bonjean, one affecting the monthly calendar, the other the weekly.

Changes in the monthly calendar in past time have by no means been infrequent, but of such a capricious character as to result in great irregularities and an inconvenient arrangement. This is a fair subject for reform by way of simplification. But a change or break in the weekly cycle, for the sake of beginning every year with the same nominal day of the week, is quite another affair. Here we should touch upon questions of religious belief, which cannot be discussed in the columns of *Science*.

But the monthly calendar, being of human devising, is open to improvement. In regard to this, M. Bonjean's proposal and my own, in No. 108 (Feb. 27), agree in placing the intercalary day at the end of the year, and in making the months to consist alternately of 30 and 31 days. But he would begin the year by giving January 30 days and February 31, and thus proceed. This method would require a change in the number of days in 8 months out of the 12 in ordinary years. But by beginning the first half of the year with a month of 31 days, and the second half with one of 30 days, as in our present calendar, only 3 months would be changed in an ordinary year, including December; and in leap year only February and July. Thus convenience and symmetry would be secured with the least possible change.

EDWARD P. GRAY.

The swindling geologist.

A thief representing himself as Leo Lesquereux, jun., and also as one Strong, son of the geologist who was drowned in this state some years since, has been doing this part of the country of late, making way with geological reports, instruments, and specimens. He has been apprehended, and is now in the jail at

Elkhorn, Walworth county, Wis. His term will expire January 28, or within a day or two of that time. He is the same man who has carried on extensive swindling operations of a similar nature in the east.

Would it not be well to have him 'sent up' as many times as possible? I send you this information, hoping that it may seem wise to you to make his whereabouts known through your widely-circulated columns, and to encourage all interested to make it as warm as possible for this impostor. He very probably assumes other names than those I have given.

He is rather short, of light complexion, has a cynical expression, wears eye-glasses, talks with the greatest freedom of geologists, finding few worthy of recognition or favor. He looks to be thirty years, but represented himself here as forty-six. He told in many places about here, but did not say it here, that he was distributing specimens from the Smithsonian institution. He imposed upon many in that way. He is conversant with geology and geological work, and is certainly well posted on fossil plants.

Prof. N. H. Winchell, Minneapolis; Prof. W. F. Bundy, Whitewater, Wis.; Smith D. Atkins, Freeport, Ill.—are men who know his operations hereabout.

R. D. SALISBURY.

Beloit, Wis., Nov. 2.

Recent Proceedings of Societies.

Academy of natural sciences, Philadelphia.

Oct. 27. — Mr. John A. Ryder made some remarks on a new theory of the development of limbs and their muscles, which he had elaborated in the course of his embryological studies. These have led him to conclusions very similar to those defended by Prof. A. Dohrn and Dr. Paul Meyer, of Naples, though Mr. Ryder's results have been reached quite independently of the European investigators. The new views assume that great modifications of development have been induced by the presence of yolk and by intra-maternal changes. Somewhat modifying Haeckel's views as to the gastrula mouth, the latter is supposed to have become greatly elongated antero-posteriorly. The muscular segments or myotomes are supposed to have been developed from the edge of such a primitive mouth either directly or indirectly, thus giving rise to metameric segments enclosed by the larval skin or epiblast. The muscular segments then push out processes into pockets or folds of the latter to produce the various types of limbs. A large amount of detail was used in illustration and expansion of these views, in the course of which it was shown that the methods of comparative anatomy alone were no longer capable of dealing with many of the more important morphological problems without help from the science of embryology.—Dr. H. C. Wood gave the results of experiments on the effect of injecting gastric juice into the blood of animals. A plan having been devised for indicating graphically the changes in temperature, it was found that an active fever was quickly produced. It was observed that the heat of the body was inverse to the amount of heat given off, thus indicating that fever is a complex process, depending on the relations of heat production and heat dissipation. The action of the pepsin in such cases is not

clear, but it probably influences the nerve centres.—Mr. Lewis Woolman called attention to a very symmetrical boulder from the neighborhood of Thirty-first street and Haverford avenue, which was quite angular, although associated with rounded pebbles, and which contained on one side impressions of fossils. These were identified by Prof. Heilprin as *Orthis* and *Atrypa spinosa*. They were the first Devonian fossils to which his attention had been drawn in this connection.—Instantaneous microscopic photographs, by Mr. D. S. Holman, of *Amœbæ*, were exhibited. The views show, for the first time, the remarkable changes of form occurring in these organisms in the space of a few seconds.

Natural science association, Staten Island.

Oct. 10. — Mr. Hollick showed plants of the partridge berry (*Mitchella repens*, L.) bearing peculiar leafy berries, and made the following remarks upon the same: "Last autumn I mentioned finding some of these berries at Tottenville, with green leaves apparently growing out of the top or sides. On first sight these leaves appear like developments of the calyx lobes, but on a close inspection it is seen that the green leaves are growing from expanded petioles, which have tightly clasped the berries to a greater or less extent, and assumed their red color. The line between the berry and its enclosing envelope is not always distinct; but during the winter specimens which had been frozen were examined, and in them the line could be traced far more distinctly, owing to the berry being somewhat shrunken. These berries were kept in water for some time, and, although they and the stem leaves retained their colors perfectly, yet the adventitious leaves soon turned yellow and withered away. During the past summer and present autumn the locality was again searched for fresh specimens, and a number were discovered. In the newly-developed berries, as might be expected, the clasping petioles had not yet assumed the pure red color, many being of a duller red, and some distinctly streaked with green. After having been kept in water for a few days, however, the red became uniform throughout."—Mr. Congdon exhibited a spider covered with a fungoid growth, a species of the genus *Achlya*, and gave an account of its life history. This fungus is frequently found on insects which have fallen into the water, as in the case of this spider. It begins as a microscopic germ. A small thread next grows out from one side, bifurcating as it extends, until by repeated subdivisions it has formed a complete network of delicate threads. It reproduces itself asexually by means of the protoplasm in these threads, which breaks up into little balls, and when ripe is expelled into the water. They swim about for some time by means of ciliæ placed at either end, which finally settle down on the body of the nidus, and in a short time have grown into a plant like the parent.—Mr. W. T. Davis exhibited a deformed specimen of *Danais Archippus*, the monarch butterfly. On the 6th of August a full grown caterpillar was collected, and, after having transformed to a chrysalis, was removed from its point of suspension and a pin passed through it. This chrysalis was intended for a cabinet specimen, but it was noted as time went on that it gradually changed color, assuming the tints peculiar to the chrysalis before the butterfly emerges. On the 21st of August the butterfly hatched out, having developed about the