

Concerning Memory.

History furnishes us with a largenumber of examples of wonderful memory.

Scaliger, an Italian, in twenty-one days committed to memory the Iliad, which comprises 15,210 verses, and the Odyssey, which also comprises a large number; Lipsius, a professor at the University of Leyden, offered to recite Tacitus' history in its entirety in the presence of a person armed with a poignard, who should stab him with it at the first error; Louis XIII., after a year's time, could draw, from memory, the plan of a country with all its details; and the actor Lassausciere, after reading advertising sheets for an hour, could repeat them textually, and this, it may be said, by way of parenthesis, must have been pretty wearisome. It is stated also that an Englishman who had an extraordinary memory was introduced to Frederick at Potsdam, and on the same day Voltaire having brought some verses to the king, the latter had the Englishman concealed and requested Voltaire to read his work. "But these verses are not yours," said the king, "they were recited to me this morning." He then produced the Englishman, who, to the great astonishment of Voltaire, recited them without error.

It is especially in the legendary stories of antiquity that we find numerous examples of extraordinary memory. Let us recall the fact that to Adrian the successor of Trajan, to Mithridates, to Themistocles, to Scipio, to Cyrus, and to many others, is attributed the faculty of remembering the names of all their soldiers; that it is claimed that Hortensius the orator attended a public sale lasting a whole day and recalled, in order, all the objects sold and the names of the purchasers; and that the ambassador Cineas, having been received in the senate, saluted by name, on the following day, all the senators, whom he had seen but once. These numerous examples from antiquity are easily explained. In fact, before the dissemination of the art of writing, the development of the memory was indispensable. In our day, this faculty is less cultivated, at least for ordinary requirements, since, by means of notes, we can almost dispense with it. Yet there is a memory that every one possesses and that many persons are ignorant of, and that is the memory of the eye, the memory of things seen, that of the artist and the draughtsman—the faculty that permits the latter to reproduce an ornament, for example, that they have seen but once. This memory is possessed by every one in a greater or less state of development, for every one sees, and to a greater or less extent classifies in his brain the things seen, and that too without being conscious of it. It is this memory of the eye that forms an excellent mnemotechnical method. The following are a few examples. Many soldiers, in order to recall theory, endeavor to figure to themselves the page *recto verso* and then the place on the page where the article that they wish to recall is found. Certain prestidigitators employ the same method for indicating in a book the page and line containing a citation that is made to them. Others, after having had repeated to them any forty common names, at once repeat them in order, either by commencing at the beginning or the end, or at random, in assigning to each of them the number of the order in which it has been given. An author of the 16th century named Muret tells that he once saw a Corsican to whom he dictated two thousand Latin, Greek, and barbarous words having no affinity with each other, and who repeated them to him in order. This appears to us doubtful, for it is pretty difficult to memorize and repeat forty words only, and requires a well drilled memory. Yet with the memory of the eye we can quickly reach the same result, not with forty, but with twenty names, for the difficulty increases in proportion to the number of words added. It is necessary to proceed as follows: Let us suppose that the first name given is "mouse;" do not attempt to recall the word, but consider your memory as a sensitized photographic plate—in a word, make a negative of the object, see before your eyes the animal itself walking slowly and carrying a placard marked No. 1. Let us take "hat" for the second name. Imagine a hat with the number 2 fixed above, as upon the hat of a conscript. For No. 3 let us suppose "chair." Imagine a chair provided with a number showing its price as marked by the dealer, etc. You will then easily recall the succession of the objects and the number of their order and will be able to name them in every way possible. Proceed in this manner up to ten, and then the next day up to twelve, and so on, gradually increasing the number. After a few repetitions of this exercise, you will be astonished at the ease with which you will succeed in retaining twenty or more words, absolutely classified in your mind as if on drawing paper, so that when you are asked the number the name will come to your mind, and reciprocally. This is a pleasing diversion for family reunions on long winter evenings.—M. Alber, prestidigitator, in *La Nature*.

A VERY extensive domestic industry in Russia consists of the manufacture of wooden spoons, which are made to the amount of 30,000,000 annually. They are nearly all made of birch.

CENTRIFUGAL ACTION OF AIR.

BY GEO. M. HOPKINS.

That air has sufficient mass to enable it when set in motion to do work is shown by every whirlwind, by

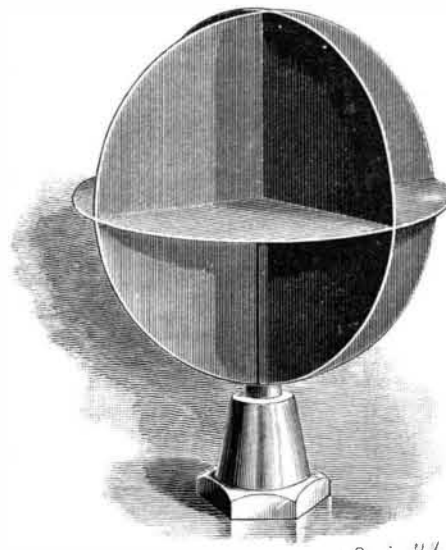


Fig. 1.—THE "SKELETON SPHERE."

the action of the windmill, by the sailing of vessels, and in other ways. The grandest example of the centrifugal action of air is furnished by some of the movements of the entire atmospheric envelope of the earth; the upward currents at and in the vicinity of the equator, the downward movement of the air at the poles, and the winds blowing along the earth's surface from the poles toward the equator are due in part at least to centrifugal force. Any body revolving in air furnishes a partial illustration of this principle, the defect in the illustration being the absence of a force to

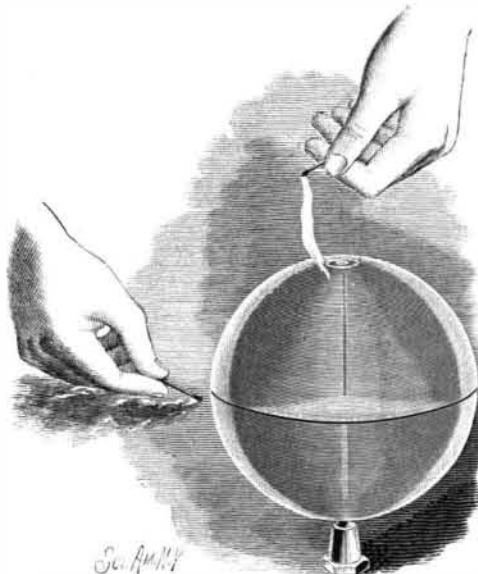


Fig. 2.—AIR CURRENTS SHOWN BY FLAME AND SMOKE.

hold the same body of air always in contact with the revolving body.

A very simple and effective piece of apparatus applied to the whirling table for showing the effect of centrifugal force on air was described some time since in a foreign scientific journal. The writer has applied this apparatus to the scientific top (already described in these columns), in the manner fully illustrated by Fig. 1. The construction of the attachment is shown in Fig. 2, and Fig. 3 shows the direction of the air currents.

The apparatus consists of a metal tube loosely fitted

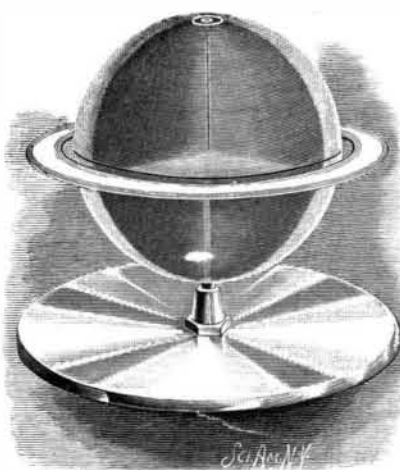


Fig. 3.—PAPER RING SUPPORTED BY AIR.

to the stem of the top and provided at its upper end with a tin disk four inches in diameter, with four quadrants of the same material attached to the disk and tube below the disk and a similar arrangement of quadrants above the disk, thus practically forming a

skeleton sphere—if such an expression may be used—of two vertical circular disks intersecting each other at the axis of rotation, these two disks being intersected at the equator by another at right angles to the axis.

The top being in rapid motion, the apparatus is placed upon the stem, and being revolved at the same rate as the top, it throws out air at the equator which is continually replaced by air drawn in at the poles. The direction of the air currents is clearly shown by holding a lighted wax taper near the apparatus at the poles, and at the equator, as shown in Fig. 2, or by creating a smoke in the vicinity of the top.

A paper ring, 1/2 inch or 3/4 inch wide, and 1/4 inch larger in internal diameter than the sphere, is supported by the outrushing air, in a plane nearly coinciding with the equator. If displaced and released, it immediately returns to its original position.

Professor W. C. Peckham, of Brooklyn, who has been experimenting with a large sphere of this kind, thinks that the trade winds could be fairly illustrated by the apparatus, provided it could be inclosed, so as to cause the same body of air to circulate continually from pole to equator, and in the reverse direction.

Inoculation by Mosquitoes against Yellow Fever.

Drs. Finlay and Delgado, of Havana, have published in the *Revista de Ciencias Medicas* some statistics of their practice of inoculating persons newly arrived in Cuba against yellow fever by means of mosquitoes which have been caused to contaminate themselves by stinging a yellow fever patient. These observations have been carried on for the last ten years, and, in addition to a certain number which are still incomplete, may be said to consist of fifty-two cases of mosquito inoculation which have been fully followed up.

Of these, twelve experienced between the fourth and the twenty-sixth day after inoculation a mild attack of yellow fever, with or without albuminuria; twelve experienced no symptoms of yellow fever either within twenty-five days after the inoculation or during three years subsequently; twenty-four experienced no symptoms within twenty-five days, but contracted a mild attack before the end of three years, either uncomplicated by albuminuria altogether or with only a very transient appearance of it; three who had had no symptoms within twenty-five days contracted well marked yellow fever within three years; one patient who had a mild attack in consequence of inoculation contracted a severe attack later on, which proved fatal; that is to say, that of those who had been inoculated, only about 8 per cent contracted the disease in a well marked form, with a mortality of under 2 per cent. In order to enable us to appreciate the significance of these figures, the authors mention that they observed sixty-five monks who from time to time arrived in Havana, where they all lived under similar conditions. Thirty-three of these were inoculated, and thirty-two were not. Only two of the inoculated contracted well marked attacks, which, however, did not prove fatal, whereas eleven of those that had not been inoculated were severely attacked, no less than five dying. It is remarked that inoculations performed in the cold weather are not entirely trustworthy, and that they should be followed up by a repetition in the spring, also that experience shows that a person who has been three years in the city without contracting the disease has become "acclimatized," and is very unlikely to be attacked at a subsequent period.—*Lancet*.

Prizes for Road Photographs.

To stimulate the collection of photographs to be used in showing the need of improved roads in the United States, the New York and Connecticut divisions of the League of American Wheelmen offer prizes aggregating one hundred dollars for the best collections of photographs of such subjects as most strongly illustrate the unfitness of the present public roads (especially the common "dirt" roads) to be used as public highways, including photographs showing the common spectacle of the farmer's team or the merchant with his loaded wagon vainly trying to drive his patient team and load out of the inevitable mud hole, and other pictures illustrating the goodness of good roads and the badness of bad roads—the proper thing in this line.

Each photograph must be accompanied by a full statement of particulars, giving date, location, etc., by which the picture may be identified. The competition will close on the first day of May, 1891.

THE Smithsonian Institution has just published the first bulletin of the United States Board on Geographical Names. The board was organized in April, 1890, for the purpose of removing a growing evil in the government publications. There was a difference in orthography and nomenclature in the different bureaus charged with publication, and even a lack of harmony in those of a single bureau. The new board received the formal sanction of the government by an executive order dated September 4, 1890. Lieut. R. Clover, Hydrographic Office, Navy Department, is the secretary, to whom all communications should be addressed.