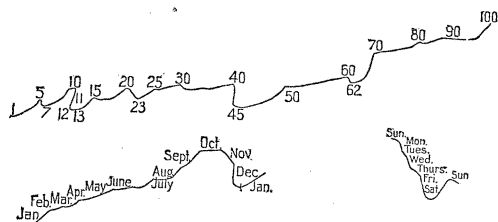


In committing prose or verse to memory, the positions of the paragraphs fix themselves in my mind so firmly that when I recite I almost read the words from the air before me, unless I have learned them by ear, in which case there is no illusion at all.

THATCHER T. P. LUQUER.

Bedford, N. Y., Sept. 28.

The matter of forms in series of numbers, months and days seems of considerable philosophical interest. Is there not herein a hint that, although to broad features, the great principles of mental states and operations are everywhere the same, yet the minutiae may be utterly incongruous and irreconcilable; and hence, that in the minute analysis of these things philosophers must always in a measure fail, because the assumption on which all philosophy is built, that minds act alike, proves to be not wholly reliable? What seems a necessity of thought, or at least a constant accompaniment of thought to one, seems ridiculous and unthinkable to another. Such forms have existed in my own mind from my earliest remembrance, yet I never thought of them as other than naturally common to all, till within a few years,



finding them entirely wanting to some minds. The annexed diagrams show that, while the numbers and the months take in general an ascending direction, the days of the week have a steep grade downwards to my mind.

SILVANUS HAYWARD.

Southbridge, Mass.

Some notes on color in *Science* recently recalled a study made by me when in Chicago a few years since. I was made president of the Kindergarten association when it was formed in 1875. This gave me occasion for several very curious lines of inquiry. Only one of these will be appropriately recalled now. A casual remark of that able teacher, Mrs. Putnam, led me to ask her which gift the children under seven first chose. She answered yellow. I said, "What, in preference to red or blue?" "Yes," she repeated, "with only one exception, invariably yellow." I then inquired of Miss Eddy, whose fine powers of observation were unequalled, and her answer was yellow. I could hardly believe it; but from every teacher there; or elsewhere, I have received the same answer, a few adding that they have had in charge a few children who were exceptions. This tallies with my recollections of my own childhood, and is confirmed by others. If it be an established fact, which I will not aver, to what shall we attribute it? Is it improbable that there is an unconscious relation between the growing child and the ray most concerned in growth, as there seems to be between old age and the red ray? We certainly outgrow at an early age our preference for the yellow.

E. P. POWELL.

Clinton, N. Y.

Ball of electric fire.

MR. J. V. WURDEMAN says that a ball of fire, as large as a child's head, came into his room at Leavenworth, hopped across the floor like a soap bubble rolling on a carpeted floor, went out through the side of the house at the corner opposite to where first seen, with a sort of explosion, or rather puff, not nearly so loud as a pistol shot nor so sharp, and tore off the rain pipe of tin. It looked like an electric brush, not brilliant nor like the electric spark. His son, a little child, was playing on the bed: his mother snatched up the boy and was half way down stairs before the ball disappeared. The ball seems to have been like the St. Elmo lights, which I have seen on a vessel's yard arm, in the Gulf of Mexico, a pale brush of light, spherical in form, like the brush issuing from a metallic point in the prime conductor of the frictional electric machine.

M. C. MEIGS.

Voss-Holtz electrical machine.

A few days ago I accidentally received a pamphlet on the theory of the Voss-Holtz electrical machine, by E. B. Benjamin, dealer in physical apparatus, New York City.

The article states that "no perfectly satisfactory explanation of all the phenomena manifested by this machine has yet been made public in this country," and then gives the theory that was published in *Science*, for June 20, 1884. In many places the sentences are the same, almost word for word, except that he has lettered the parts of the machine, and used the letters for the names of the parts.

Mr. Benjamin gives no credit either to *Science* or to the author, and further copyrights, by itself, the part of the pamphlet containing the theory, the date of the copyright being 1885.

H. W. EATON.

Louisville, Ky., Oct. 2.

Carnivorous habits of the striped squirrel.

As the carnivorous habits of the musk-rat and other rodents have been under discussion during the past year, I wish to record a rather remarkable instance, which came to my notice in New Hampshire, May 27, 1883, in case of the striped or ground squirrel, *Tamias striatus* (L) Baird.

The chipmunk is usually regarded as a harmless vegetarian, living chiefly, if not wholly, upon nuts, fruits, and the seeds of grain and various plants; but this is probably not the whole truth of the matter, at least in the following case, for an account of which I am indebted to the Rev. F. M. Gray, of Plymouth, N. H.

On the morning of the day in question, he was in the woods, and stopped to listen to some bird, when his attention was called to a white-footed or deer mouse (*Hesperomys leucopus*, (Raf.) LeC.), which ran hurriedly past, carrying something in its mouth.

Suddenly a chipmunk, which had watched proceedings from a stump near at hand, pounced down upon the mouse, caught up what she had carried in her mouth, but had dropped through fright, and returning to his stump began to devour it greedily.

The captured prey could now be seen to be a young mouse, which the squirrel ate as he would a nut or a piece of apple, in this case beginning with the head.

To further verify the fact, he frightened the chipmunk, and brought home the half eaten young mouse, which I examined, and found to be of the species above mentioned.

Writers on our natural history have much to condemn in the carnivorous propensities of the red squirrel (*Sciurus Hudsonius* Pallas), of the flying squirrel (*Sciuropterus volucella*, (Pall) Geoff), the rats and shrews, but the chipmunk escapes without vituperation.

Speaking of the food of the striped squirrel, Audubon says, in 'Quadrupeds of North America,' "it prefers wheat to rye, seems fond of buckwheat, but gives preference to nuts, cherry-stones, the seeds of the red gum or pepperidge (*Nyssa multiflora*), and those of several annual plants and grasses." He mentions the case, reported to him by a Boston lady, of a ground squirrel which was seen taking young robins from the nest. This, he thinks, was an "unnatural propensity in the individual," and did not indicate "the genuine habit of the species."

Dr. C. Hart Merriam, in his 'Vertebrates of the Adirondack region,' says "the striped squirrel feeds upon a variety of nuts and roots, and is fond of corn and several kinds of grain." It is especially fond of beech nuts, and stores up the seeds of various plants, as of the buttercup; eats the tubers of the ground nut (*Aralia trifolia*), and the yellow 'kernels' of squirrel-corn (*Dicentra Canadensis*). He quotes from a writer in the *American naturalist*, who saw a chipmunk "busy nibbling at a snake that had been recently killed. He could hardly be driven away, and soon returned to his feast when his tormenters had withdrawn a short distance."

It is commonly known that the red squirrel is carnivorous to the extent of eating cocoons of insects in the spring, devouring bird-eggs, and even taking the young birds from the nest; and it is quite possible that the chipmunk, which is rarely seen in trees, may become emboldened to treat the smaller ground-building birds in a similar fashion. The wholesale destruction of birds, which is often rightly attributed to the red squirrel, may be shared in to some extent, at least, by the no less active *Tamias*.

F. H. HERRICK.

Recent Proceedings of Societies.

Academy of natural sciences, Philadelphia

Oct. 6.—Mr. Charles Morris made a communication on the subject of attack and defence, as determining agents in animal evolution. In considering the development of the dermal skeleton of animals, with its various modifications, we are led almost to the conception that nature has been controlled at successive periods by special ideas, each dominant during a long period and then abandoned in favor of a new one. We are quite sure that the first appearance of fossils in the rocks does not indicate the first appearance of life upon the earth. Early fossilization is due to the preservation of the dermal skeletons of animals of considerably advanced organization, and these were very probably preceded, during a long era, by soft-bodied forms of low organization, which could leave no trace of their existence, except in the case of the burrowing worms. The development of an external skeleton seems to have come like a new idea to nature, and was adopted simultaneously, as it seems, though probably at considerable intervals by the

various types of life. At a later era, the prevailing tendency is not to assume armor but to throw it off. The labyrinthodont amphibians were clothed in armor, their heads in particular being protected by hard, bony plates. Modern amphibians are naked-skinned animals. The reptiles are usually scaled, but with the exception of the crocodiles and turtles and some few fossil types, they do not seem to have been clothed in bony armor, while in the birds and mammals all defensive armor is lost. The same tendency to pass from the armored to the unarmored state is seen in invertebrate life. These changes were held to have taken place in consequence of the reciprocal influence of attack and defence. If a food animal gained some structural feature which gave it an advantage over its carnivorous foes, the latter would be at a disadvantage until they had gained equivalent features. So, if a carnivorous animal gained some habit, motion, or weapon, which gave it an advantage in destroying, this must have acted as an incitement to a corresponding development in food animals. Illustrative facts were freely given to support the belief that four successive ideas emerge into prominence in the development of the animal kingdom. In the primeval epoch it is probable that only soft-bodied animals existed, and the weapons of assault were the tentacle, the thread cell, the sucking disk, and the like unindurated weapons. At a later period, armor became generally adopted for defence, and the tooth became the most efficient weapon of attack. Still later, armor was discarded, and flight or concealment became the main methods of escape, and swift pursuit the principle of attack, while claws were added to teeth as assailing weapons. Finally, mentality came into play, intelligence became the most efficient agent both in attack and defence, and a special development of the mind began. As a culmination of the whole, we have man, in whom mentality has replaced all other agents in the struggle for existence. But side by side with man all the other types exist, the soft-bodied, the armored, the swift moving, and those in which cunning precedes the higher mentality. In the existing conditions of life on the earth, we have an epitome of the whole long course of evolution. Prof. Heilprin, while agreeing in the main with Mr. Morris's arguments and deductions, remarked the occurrence of certain conditions among early organic forms, which, from the position defined, would be anomalous. The Cambrian trilobites, the largest organisms apparently of their time, were already clad in very perfect armor. Was this the result of evolution without the necessity for defence? The most highly armored ganoid fishes are those of the shortest period of existence. The huge carboniferous amphibians are cased in armor, without the existence of contemporaries at all powerful enough to inflict damage on them; while at the present time the unprotected ant eater lives side by side with such armored forms as the armadillo.—Mr. Redfield called attention to the fact that in the vicinity of Mt. Desert the traces of glacial action were very obscure, and stated that this had been accounted for by the theory that the region had been submerged for a sufficient length of time to remove the striae from the softer rock. On the hard quartz veins the scoring was evident, while farther inland the slates and softer deposits bore clear traces of glacial scratching. The subject was further considered by Mr. Aubrey H. Smith and Prof. Heilprin, the latter holding that the geologists were apt to