

ivers. It would swim about in all directions, and was often found under stones and in little holes and crevices, none of which appeared to have been made for the purpose of retreat, but were accidental. The crayfishes would leave these little retreats whenever disturbed, and swim away down stream out of sight. They were often found some distance from the main stream under rocks that had been covered by the brook at a higher water-mark; but although there was very little water under the rocks, and the stream had not covered them for at least two weeks, they showed no tendency to burrow. Nor have I ever found any burrows formed by the river species *Cambarus affinis*, although I have searched over miles of marsh-land on the Potomac for this purpose.

The brook near where my observations were made was fast decreasing in volume, and would probably continue to do so until in July its bed would be nearly dry. During the wet seasons the meadow is itself covered. Even in the banks of the stream, then under water, there were holes, but they all extended obliquely without exception, there being no perpendicular burrows, and no mounds. The holes extended in about six inches, and there was never a perpendicular branch, nor even an enlargement at the end. I always found the inhabitant near the mouth, and by quickly cutting off the rear part of the hole could force him out, but unless forcibly driven out it would never leave the hole, not even when a stick was thrust in behind it. It was undoubtedly this species that Dr. Godman mentioned in his "Rambles of a Naturalist," and which Dr. Abbott (*Am. Nat.*, 1873, p. 81) refers to *C. bartonii*. Although I have no proof that this is so, I am inclined to believe that the burrowing crayfishes retire to the stream in winter, and remain there until early spring, when they construct their burrows for the purpose of rearing their young, and escaping the summer droughts. My reason for saying this is that I found one burrow which on my first visit was but six inches deep, and later had been projected to a depth at least twice as great, and the inhabitant was an old female.

I think that after the winter has passed, and while the marsh is still covered with water, impregnation takes place and burrows are immediately begun. I do not believe that the same burrow is occupied for more than one year, as it would probably fill up during the winter. At first it burrows diagonally, and as long as the mouth is covered with water is satisfied with this oblique hole. When the water recedes, leaving the opening uncovered, the burrow must be dug deeper, and the economy of a perpendicular burrow must immediately suggest itself. From that time the perpendicular direction is preserved with more or less regularity. Immediately after the perpendicular hole is begun, a shorter opening to the surface is needed for conveying the mud from the nest, and then the perpendicular opening is made. Mud from this and also from the first part of the perpendicular burrow is carried out of the diagonal opening and deposited on the edge. If a freshet occurs before this rim of mud has a chance to harden, it is washed away and no mound is formed over the oblique burrow. After the vertical opening is made, as the hole is bored deeper, mud is deposited on the edge, and the deeper it is dug the higher the mound. I do not think that the chimney is a necessary part of the nest, but simply the result of digging. I carried away several mounds, and in a week revisited the place, and no attempt had been made to replace them; but in one case, where I had, in addition, partly destroyed the burrow by dropping mud into it, there was a simple half rim of mud around the edge, showing that the crayfish had been at work; and as the mud was dry the clearing must have been done soon after my departure. That the crayfish retreats as the water in the ground falls lower and lower,

is proved by the fact that at various intervals there are bottle-shaped cavities marking the end of the burrow at an earlier period. A few of those mounds farthest from the stream had their mouths closed by a pellet of mud. It is said that all are closed during the summer months. How these animals can live for months in the muddy, impure water is to me a puzzle. They are very sluggish, possessing none of the quick motions of their allied *C. bartonii*, for when taken out and placed either in water or on the ground they move very slowly. The power of throwing off their claws when these are grasped is often exercised. About the middle of May the eggs hatch, and for a time the young cling to the mother, but I am unable to state how long they remain thus. After hatching they must grow rapidly, and soon the burrow will be too small for them to live in, and they must migrate. It would be interesting to know more about the habits of this peculiar species, about which so little has been written. An interesting point to settle would be how and where it gets its food. The burrow contains none, either animal or vegetable. Food must be procured at night, or when the sun is not shining brightly. In the spring and fall the green stalks of meadow grasses would furnish food, but when these become parched and dry they must either dig after and eat the roots, or search in the stream. I feel satisfied that they do not tunnel among the roots, for if they did so these burrows would be frequently met with. Little has as yet been published upon this subject, and that little covers only two spring months, April and May, and it would be interesting if those who have an opportunity to watch the species during other seasons, or who have observed them at any season of the year, would make known their results.

RALPH S. TARR

#### THE YOUNG GORILLA OF THE JARDIN DES PLANTES

THROUGH the courtesy of the editor of *La Nature* we are able to give an illustration from an instantaneous photograph of a young male gorilla obtained at the commencement of last winter by the Natural History Museum at Paris. It had been imported from the Gaboon, and it was the first living specimen of this great anthropomorphic ape which had been brought to France. Its study would have presented many points of interest, not alone from the Natural History point of view, but also from the opportunity it would have afforded of studying the development of its intellectual faculties. This young specimen was about three years of age, he had already his full complement of milk-teeth, and the long and sharp canines were decidedly longer than the molars. In disposition he appeared to be very different from either the orang-outan or the chimpanzee. While these in a state of captivity are mostly gentle and sociable, this young gorilla on the other hand was savage, morose, and brutal; he never gave his keeper the least mark of affection; he never allowed himself to be touched without evidencing the greatest aversion, and for the most part he returned caresses by snappings. He never took the least part in the games of the other apes, and he most reluctantly tolerated having them near him. He was but little active, and most generally kept himself crouched up in a corner of the cage, or sitting on a branch with his back up against the wall, and scarcely ever moved but to look about for something to eat. He used his hands with much readiness, and they were extremely well developed. His lips were less mobile than in the chimpanzee, especially the lower lip, which was never pouted out when drinking into a spoon-shaped form. His eyes were extremely mobile, and were crowned with immense superciliary ridges; his nose was flat, with excessively large nostrils, giving him a quite peculiar physiognomy.

His intelligence was feebly developed, and was in any case quite below that of the other anthropoid apes, or



even of the gibbons. Since the above note was presented by Alph. Milne-Edwards to the Paris Academy of Sciences the young gorilla died at the Jardin des Plantes.

#### NOTES

THE portrait of the late Sir William Siemens, which we give this week as one in our series of Scientific Worthies, belongs to the previous volume of NATURE, and is intended to accompany the memoir at p. 97.

THE Secretary of State for India has determined that India shall be represented at the forthcoming International Prime Meridian Conference at Washington, and has nominated as the India Office delegate Lieut.-General R. Strachey, C.S.I. Capt. Sir Fred. J. O. Evans, R.N., K.C.B., F.R.S., and Prof. J. C. Adams, F.R.S., on the recommendation of the Science and Art Department, have been appointed delegates to represent the United Kingdom at the Conference.

ON May 28, at an extraordinary meeting of the Vienna Academy of Sciences, Count Hans Wilczek was elected Honorary Member. In the Mathematical and Natural Science Section, Dr. Albrecht Schrauf, Professor of Mineralogy at the Vienna University, and Dr. Leopold Gegenbauer, Professor of Mathematics at the Innsbruck University, were elected Corresponding Members. As Foreign Honorary Members were elected Sir William Thomson, and Charles Hermite (Paris); as Foreign Corresponding Members, Prof. L. Leuckart (Leipzig), Prof. Edward Frankland, and Prof. Carl Nägeli (Munich).

THE "Rede" Lecture was delivered on Wednesday, last week, in the Cambridge University Senate House, by Mr. Francis Galton, M.A., F.R.S. Mr. Galton, who had selected as the subject for the lecture "The Measurement of Human Faculty," stated that, although it had been a matter of controversy whether a more complete measurement of man's capacity could be attained than was already discovered by means of examinations which measured intellectual capacity, yet he would endeavour to demonstrate that as the capacity of man, taken in its widest sense, including character and physique, was finite, therefore it was measurable. He pointed out that an important adjunct to the attempt to measure human faculty would be records containing particulars regarding eyesight, colour-sense, hearing, breathing capability, height, span of arms, &c. At the Johns Hopkins University in America physical education and hygiene were compulsory on all students, and although the physical measurements taken were not compulsory yet few objected, and the result was that the most valuable statistics were collected, and in many instances good advice given to the students in what way to counteract the effects of any abnormal condition observed, such as irregularity of muscular development. Mr. Galton concluded by suggesting that a laboratory should be opened at Cambridge to investigate this new science. The cost would be small; the result, he ventured to predict, would be large and beneficial, for, by the compiling of continuous records of health, growth, and disease, much useful knowledge would be acquired, and by a long series of observations on the lines he had indicated it would be possible to measure the human faculty as accurately as, if not more so than, our system of examinations measures the intellectual faculty.

WE understand that the Fishery Board for Scotland is anxious to have powers enabling it to remove obstructions which interfere with the ascent of salmon up several Scottish rivers. It is specially desirous to introduce as soon as possible a fishway at the falls, and this, when done, would open up some 500 miles of excellent fishing and spawning ground. Last week there were several interesting arrivals from fishery officers:—(1) A fine specimen of the "Opah fish" (*Lampris guttata*) was taken off Unst Island, Shetland, on May 22, and forwarded by the fishery officer to Prof. Ewart, University of Edinburgh. The fish, which measured 4 feet in length and over 2 feet in depth, has been handed over to Prof. Turner. This Opah will enable Prof. Turner to complete an account of the fish begun some years ago, when he received a somewhat smaller specimen from the Moray Firth. (2) A turbot with peculiar frontal process, an eye on each side of the head, both sides of the body equally dark, and provided with spines. (3) Mature sprats. It seems proved that sprats leave the estuaries in spring to spawn at sea. (4) Developing herring eggs. Taken along with similar specimens which have been arriving since October last, these show that herring spawn on the east coast from August until May, and not, as is usually supposed, only during August and September and during February and March.

IN response to the appeal of the Prince of Wales, as President of the City and Guilds of London Institute, the following contributions have been already promised to the General Fund and to the Equipment Fund of the Central Institution, Exhibition Road, by the undermentioned Companies:—Fishmongers, 4000*l.*; Mercers, 2000*l.*; Clothworkers, 2000*l.*; Corporation of London, 1000*l.*; Skinners, 1000*l.*, and an increased subscription of 500*l.* annually; Leather-sellers, 500*l.*; Carpenters, 500*l.*; Armourers and Braziers, 300*l.*; Tallow Chandlers, 105*l.*; Scriveners, 105*l.*; Stationers, 52*l.* 10*s.* annually; Clock-makers, 26*l.* 5*s.* The letter of the President is still under the consideration of the Courts of several Companies, and it is confidently expected that the sum required will be obtained.