

THE WIDAH BIRD OF PARADISE.

Through the kindness of Mr. W. Stoffregn, importer of birds, this city, we are enabled to give a representation of this beautiful bird. The widow bird of paradise, or widah bird, as it is called by the natives, is an inhabitant of Western Africa, being found throughout the districts of Senegal and Angola; and as it is of a light and airy disposition, it gives a lively aspect to the trees among which it lives. The paradise widah bird is very gorgeously clothed with softly tinted and gracefully shaped plumage. The general color of the male bird in his full dress is a deep black on the wings, tail, and back, with a collar of bright yellow. The head and throat are also black, the breast being a rich reddish-brown just below the throat to center of breast, where it softly melts into the pale color of the abdomen and under portions of the body. The tail of this bird is most singularly formed. Both webs of the two central feathers are extremely broad for about three inches, and then suddenly disappear, leaving the bare, slender shaft to project for about two inches. The two next feathers are equally elongated and rather broadly webbed, being nearly three-quarters of an inch wide. They are often more than eleven inches long, and sweep in a graceful curve from the insertion of their quills to the extremity of their points. All the feathers of the tail are set vertically, so that the profile is much more striking than the full view.

This bird has been commonly called the widow bird by many persons on account of its dark color and long train, as well as in consequence of its evidently disconsolate state when the beautiful tail feathers have fallen off after the breeding season. Of late years the widah bird has come into fashion in England and France as an inhabitant of the aviary. Some of the French dealers have succeeded in breeding these birds.

On account of its peculiarly long tail the widah bird requires a very roomy cage, with perches of considerable height and so arranged as not to interfere with its movements. It is very fond of bathing, and, like many other birds, bursts into a cry of gratitude when supplied with water.

Its nest is ingeniously woven from vegetable fibers, said to be wholly those of cotton down, and is divided into two compartments, one being for the use of the female and her eggs or young and the other for a seat for the male, whereupon he may perch himself to sing to his family. The broad-shafted widah bird is about the size of a sparrow, measuring between five and six inches, exclusive of the elongated tail feathers. After the breeding season the beautiful plumes fall out, and the whole coloring of the bird is changed from the deep black and orange into rusty brown and dull white. The proper name of this bird is widah bird, a title that was originally given to it by a Portuguese, because the first specimens brought to Europe came from the kingdom of Widah, on the eastern coast of Africa.

Power of Inventions.

It is not every one who appreciates the importance of helping the inventors along. They are the salt of the earth. Congress can well go out of its way to consider any law which to any extent will assist them in getting a fair return for their ideas. If a system of laws could finally be enacted giving full and fair compensation to each inventor promptly, as one by one he discovered the secrets of nature, there would not be, as there are at present, so many of nature's secrets hidden from us. We might find that, instead of this world being one of incessant toil, nature intended it to be one of comparative ease, and instead of being a world of incessant worry, perhaps we should find nature intended it to be one of comparative contentment.—*American Journal of Politics.*

THE Foster Engineering Company, of Newark, N. J., report great activity in the marine and railroad departments of their works. In addition to fitting out the Columbia with valves, they have an order for two 5 inch, two 4 inch, one 3 inch and eight 2 inch valves for the Indiana. The new warships of the Brazilian navy, the Nietheroy and the America, as well as the torpedo boats, were equipped with the Foster pressure regulator.

Conduction, Convection, and Radiation of Heat.

To have a change of temperature, it is of course necessary that heat should pass from one body to another. This can be done in three ways. These are called conduction, convection and radiation. When heat is transmitted by what is called conduction, it passes from particle to particle of matter. Each particle, we may suppose, as it receives more of that kind of motion which we call heat, increases the motion of its neighbor. When heat passes through a body of any kind by conduction, each particle of matter on its way is heated. The rate at which heat passes in this way is different in different bodies. Through silver, heat passes fastest by conduction, hence, we say that silver is the best of all conductors of heat. Copper has a conducting power 81 per cent as great as that of silver. Zinc is another very good conductor, its conducting power being about 64 per cent of that of silver. Heat is readily communicated from solids to liquids

through the ice lens, which was not melted. Most gases allow radiant heat to pass easily. When open fires were used for heating, it was radiant heat chiefly that warmed the rooms. This left the air comparatively cool; in fact, the air was not warmed at all, save as it came in contact with the walls of the room or objects in it. One of the peculiar advantages of the old fashioned fireplace was the coolness of the air compared with the objects of the room.—*Canad. Arch.*

Amateur Photography in Russia.

Amateur photography has made but little progress in Russia. There are not, I believe, any photographic societies in that country, and one rarely, if ever, hears of a Russian amateur contributing to any of the international exhibitions. I have often wondered why this was so, and have at last discovered the solution of the problem. In this country one is free to go where one pleases and to photograph anything. Amateur photography thus becomes a pleasant and fascinating pastime. In Russia, however, things are different.

A gentleman who has resided for years in that country relates his experiences, and from these I gather the following information: To become an amateur photographer it is necessary to communicate with the police and obtain a license. This having, after considerable delay, been granted, it is advisable for one to be very careful where he or she is seen photographing. If one happens to be in close proximity to a fortress when discovered by the Secret Intelligence Department, he stands a chance of being dispatched on a free excursion to Siberia, where return tickets are not supplied.

Further, of every picture made a copy must be sent to the police authorities and another must be filed by the photographer for reference. The police have also the right at any time of the day or night to enter your dark room and examine everything therein and to search all of your photographic paraphernalia.

Nor is this all the unfortunate amateur has to put up with. All of his dry plates have to be imported (as they are not manufactured in Russia), and each box is opened and every plate examined. It is a wonder they do not immerse each one in a developer as well, to ascertain if there are any nihilistic communications latent in the film. Poor, suffering Russian amateur photographers! I would gladly extend to you my deepest sympathies, only I know it will be useless. Every line of this will be blackened out with an ink pad before any one in your country can receive this copy of the *Herald*.—*New York Herald.*

Alchemists' Alloys.

The alchemists of the middle ages were incessantly occupied with the endeavors to transmute metals. Many alloys were known to them which are lost to us, and their recipes contain many useful hints, worthy of the attention of modern scientists. There is curious book in the Bibliotheque Nationale, entitled *Liber sacerdotum*, the book of the priests. It is supposed to have been written by the Jewish priests, but probably dates from the eighteenth century. Here is one of the curious recipes contained in this book: Mix a quantity of iron

filings with a quarter of its weight of red orpiment. Press the mixture in a linen cloth, inclose in a smelting pot, and leave it for a whole night in a heated furnace. Next add some oil and natron, and just as much copper filings as there is iron, melt all together, and the result will be a fine material for hammers.—*Berthelot, in the Annales des Chimie et Physique, Paris.*

THE *Centrabblatt fur klinische Medicin*, for December 9, mentions an expedient described by Dr. Naegely, in the *Mercure medical*, 1893, No. 31, for cutting short the paroxysms of whooping cough and for the treatment of trigeminal neuralgia, hemicrania, globus hystericus, and nervous vomiting. It consists in seizing the two greater cornua of the byoid bone with both thumbs and holding the bone, together with the larynx, up for from sixty to ninety seconds. The efficacy of this manipulation is said to have been proved in a sufficient number of cases. The author cannot explain its *modus operandi*, but he thinks it calls an inhibitory reflex into play.—*N. Y. Med. Jour.*



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and from liquids to solids. When a particle of a liquid is heated by coming in contact with some hot solid, as, for example, the bottom of a dish in which it is suspended over fire, being expanded over heat, the colder and heavier particles press it upward toward the surface and themselves come in contact with the bottom of the dish. In this way the whole body of liquid or gas contained in a vessel is heated. This method of transmitting is called convection.

The third method by which heat may pass from one body to another is called radiation. Heat radiated does not pass from one particle of a body to another, but goes through air or a vacuum, or in some cases through solid bodies, with a different velocity from that with which it is conducted. Radiant heat does not heat the body through which it passed. Thus the heat of the sun may be felt even when it passes through a pane of glass covered with frost. Many of our readers will call to mind Dr. Kane's experiments of a burning lens made from ice. In this case the heat rays from the sun were brought to a focus by passing