

BIRDS OF PARADISE.

Dr. F. H. H. Guillemard, in his interesting natural history work entitled "The Cruise of the Marchesa," gives the following account of some of these birds which he obtained in New Guinea:

Our first ramble on shore was attended with but little success. We searched in vain in one of the lesser bays for a patch of beach on which to disembark, but the mangroves, which in these regions obliterate utterly all boundary between sea and land, met us at every turn, and ultimately scrambling over their slimy roots, and struggling up to our knees in liquid ooze, we had to reach *terra firma* as best we could. The land rose steeply from the sea, and the jungle, dripping wet from the heavy rain which we had almost constantly experienced since our arrival in New Guinea, rendered our progress anything but comfortable. Forest rambles such as these, it must be confessed, are somewhat trying to the temper. Wet through with perspiration, each yard makes the already streaming traveler, if possible, still wetter, for every leaf encountered pours a little bucket of water upon him as he struggles through the mass of creepers that bar his path. Shooting and walking cannot be combined under such conditions, and almost the only method for the naturalist to obtain specimens is to post himself under some tree in fruit, and to wait patiently until the birds that are feeding upon its summit happen to come within range of his gun.

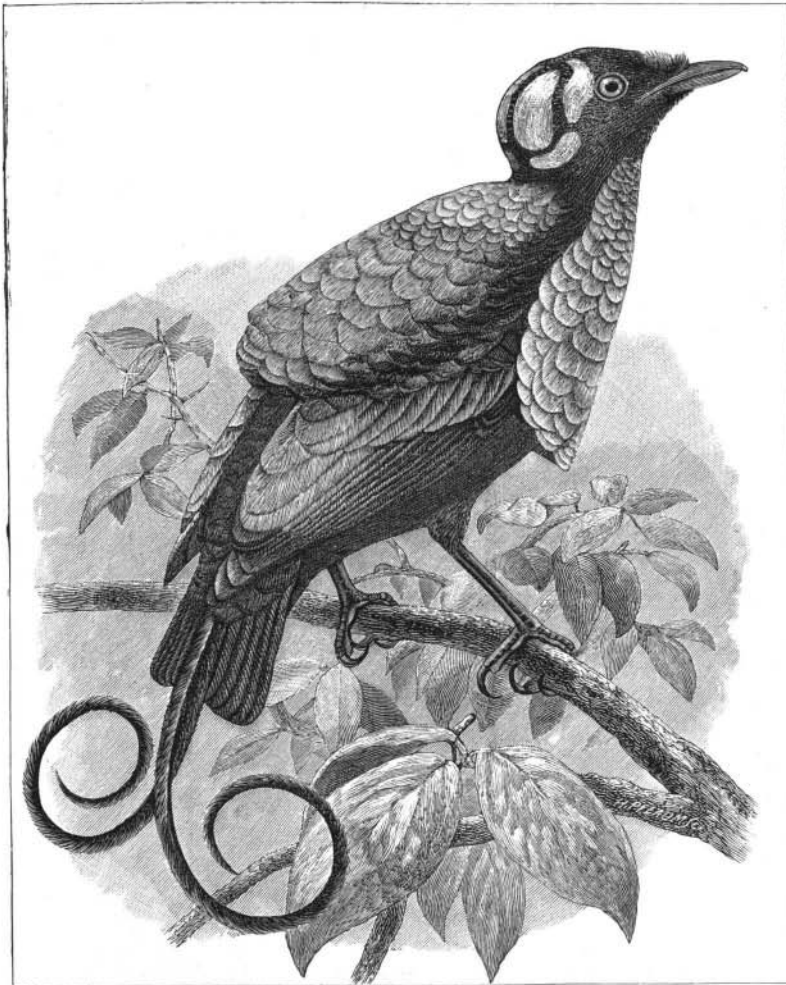
We returned rather disappointed to the yacht, and found that some of the hunters had already got back. They had shot nothing of any particular interest. Presently, however, Usman and his *compagnon de chasse* appeared, triumphant, carefully carrying a prize that we had hoped but hardly expected to obtain—the curious and exquisitely lovely little *Diphyllodes wilsoni*, smallest of all the birds of paradise. Behind the head a ruff of canary colored feathers stands erect above the scarlet back and wings. The breast is covered by a shield of glossy green plumes, which toward the throat are marked with metallic green and violet spots of extraordinary brilliancy. The two center feathers of the tail, prolonged for five or six inches beyond the others, cross one another, and are curved into a complete circle of bright steely purple. But the chief peculiarity of the bird is in the head, which is bald from the vertex backward, the bare skin being of the brightest imaginable cobalt blue. The *bizarre* effect thus produced is still further heightened by two fine lines of feathers which, running lengthways and from side to side, form a dark cross upon the brilliant azure background. I could hardly make up my mind to skin this little ornithological rainbow, whose exquisite plumage it seemed almost a sacrilege to disarrange, but the climate of New Guinea allows of but little delay in this operation, and I set about my task at once. The bird had been scarcely injured by the shot, and I succeeded in making a perfect skin of it. We also added a hen bird of the same species to our collection. Its plumage is of a sober brown, as is the case with the females of all the *Paradisæidæ*, but, like the male, the bare head is blue, although not nearly of so bright a color.

Wilson's bird of paradise, which we had thus been the first Englishmen to obtain, the naturalists Beccari and Bernstein being the only others who have been fortunate enough to meet with it in its native haunts, is entirely confined to Batanta and Waigiou Islands; but though we afterward shot it in the latter, it would seem to be much rarer there, and during Mr. Wallace's two months' visit he failed to obtain it.

We found it frequenting trees of no great height at an altitude of seven or eight hundred feet above the sea, and there is no doubt that, like many of the family to which it belongs, it is very local in its distribution. This localization is not necessarily permanent, but seems to be dependent rather on the abundance in certain spots of the fruit in season, for most of the birds of paradise are in the main frugivorous, although occasionally varying their diet with insects.

The paradise birds attract attention less by the brilliancy than by the extraordinary development of their plumes. From the Arfak range we had obtained several species, which at a little distance look a uniform black. Two of these—*Lophorhina* and *Parotia*—are

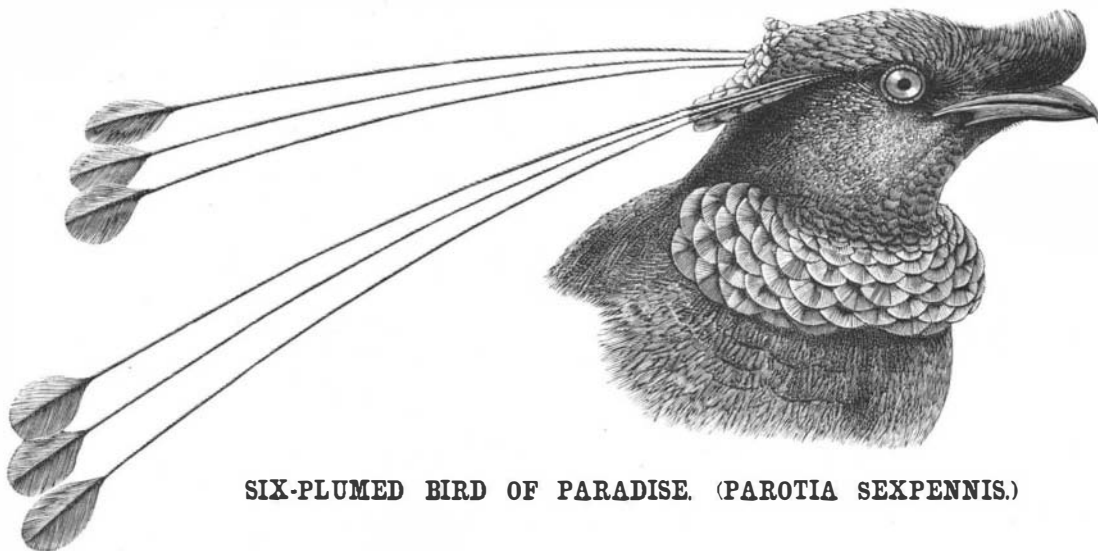
furnished with appendages which are, perhaps, as striking as any with which longages of sexual selection have provided the birds of this group, but until the specimen is taken up in the hand they will pass unnoticed. In the former\* an immense plume of feathers springs from the occipital region, and reaches to the end of the tail. It is of the deepest velvety black, shot in some lights with oily-green reflections, and with the outermost feathers slightly recurved toward the tip. The top of the head is covered with scale-like feathers



WILSON'S BIRD OF PARADISE. (DIPHYLLODES WILSONI.)

of metallic green, and a shield of the same color and nature, but of a still brighter shade, adorns the breast. The rest of the body is dull black. Any further ornament or color would be out of place, and one feels that the superb creature fully deserves its appellation of the superb bird of paradise.

Almost more beautiful still is *Parotia sexpennis*, the six-shafted bird of paradise, which Signor D'Albortis was the first European to observe in its native jungle. The curious plumes which give the bird its specific name lie so close to the neck in the dried skin as to be almost invisible. They consist of three slender filaments springing from each side of the head and terminated by a spatulate expansion. A bar of vivid steely green across the vertex, and a peculiar puff of metallic silver at the base of the beak—a color, which, so far as



SIX-PLUMED BIRD OF PARADISE. (PAROTIA SEXPENNIS.)

I know, is unique in the bird world—completes the head decoration. Like *Lophorhina*, the rest of the plumage is almost entirely black, except at the upper part of the breast, which is furnished with a collar of green and bronze feathers. The tuft of silvery feathers on the forehead can be either erected, as represented

\*The impossibility of giving all the features of this curious bird in a single illustration has led to its representation in a position which is quite possibly incorrect. As far as could be gathered from the natives, the enormous crest as it appears displayed during the courtship of the female is spread more widely, in the shape of a fan opened out to its fullest extent, and the pectoral shield being expanded in a similar manner, the head of the bird forms the center of an irregular circle of feathers of velvety black and emerald, which completely hides the rest of the body when viewed from in front.

in the engraving, or depressed flat against the skull, where it forms a triangle of regular shape with the apex forward.

How Mirrors Are Made.

One of the factories in Chicago employs some 150 men and boys, and its spacious four floors present an interesting series of sights to the visitors whose nerves are steel and tympani proof against splitting. On the first floor he will see huge stacks and piles of glass in assorted sizes, ranging from 16 feet by 7 feet squares down to the smallest ovals for mirrors. These are all polished, some being run over huge felt covered wheels kept powdered with rouge, and the larger sheets scrubbed by sweating toilers with hand blocks covered with felt like a printer's proof planer in rouge. After the glass is thoroughly polished it is taken up to the next floor, where it is laid on tables and cut into the sizes ordered. It then passes into the hands of the bevelers, who, with sand and water and large grindstones, artistically finish the edges of the glass. It takes a trip upward again, to another floor, and is once more put through a polishing process to remove any scratches or blemishes that may be on the glass. After every spot or scratch, no matter how minute, has been removed, careful hands convey the now beautiful and sparkling glass to the room where it goes through the final process, the silvering. Huge tables of cast iron or stone, made like billiard tables, with raised edges, are used in the silvering room. These tables are of great strength and solidity, and all around the edge is a drain, for the superfluous mercury is poured over the tables in quantities sufficient to float the glass, which, after being tinfoiled, is gently and carefully pushed across the table containing the mercury. Great care must be used to prevent blemishes, the least speck of dust being ruinous to the mirror. Mercury, like molten lead, is always covered with a dirty-looking scum which cannot be removed by skimming. The least bit of this scum would spoil the mirror, so the difficulty is obviated by shoving the scum along with the edge of the glass. After successfully floating the glass on the mercury, a woolen cloth is spread

over the whole surface and square iron weights are applied until the whole presents a compact mass of iron, two or three pounds to the square inch. After this pressure has been confined for ten or twelve hours, the weights are removed and the glass placed upon another table of wood with a slightly inclined top. The inclination is gradually increased until the unamalgamated quicksilver has drained away and only the perfect amalgam remains, coating the glass and perfectly adherent. This ends the process, and the erstwhile rough piece of plate glass emerges from the silvering room a gorgeous mirror.—*Western Manufacturer.*

The Work Done by Machinery.

That locality and circumstance alone are true magicians in respect to their effects on the value of human labor is well known. In a manual by Mr. Alexander Wylie, entitled "Labor, Luxury, and Leisure," it is stated that on the vast farms of Dakota, the equivalent of one man's work, supposing the crop amount to 20 bushels to the acre, is 5,500 bushels of wheat. Now, keeping back enough for seed, we have here sufficient to produce 1,000 barrels of flour. This mass of food stuff can be carried through the flour mill and put into barrels, including the labor of making the latter, at the equivalent of one other man's labor for a year. Again, it has been worked out that at the ratio of the work accomplished by each man employed on the New York Central Railroad, the wheat can be transported to the flour mill and the thousand barrels of flour removed to New York, and all the machinery of the farm, the mill, and the road be kept in full "going order," for an equivalent to the whole labor of two more men. It comes, then, to this: that one thousand barrels of flour, the annual ration of one thousand persons, can be placed in New York from a point 2,000 miles away with the exertions of only four men working one year in producing, milling, and transporting the wheat. Further, this staple food can be baked and distributed by the endeavors of three more persons. It follows, then, that just seven persons can supply one thousand with the staff of life.