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'The Malay Archipelago.'

The Malay Archipelago: the Land of the Orang-utan, and the Bird of Paradise. By Alfred Russel Wallace. 2 vols. London: Macmillan and Co. 1869.

Nature has been said by some one to delight in contrasts, and certainly no more striking contrast can be suggested than that of the title of these volumes the land of the orang-utan and the bird of paradise, bipeds, as everybody knows, of most opposite externals and characteristics. The land in which one of the ugliest of mammals and of the most beautiful of birds exist in the same forests has long continued to be one of the least known to Europeans, and we do not hesitate to say that to the late intrepid and untiring Rajah Brooke we are mainly indebted for what information travellers are permitted to gather and lay before us. Of these Eastern travellers, Mr. Russel Wallace may be classed amongst the most thoughtful, as he proves himself to have been one of the most successful, of naturalists. He was eight years in the Indian Archipelago of the Pacific. He went there as a cultured scientific observer. He had a worthy object in view, and had prepared for its prosecution and accomplishment; and after diligently pursuing that object, he returned to England in the spring of 1862, to find himself "surrounded by a room full of packing-cases, containing the collections that I had from time to time sent home for my private use. These comprised nearly three thousand bird skins, of about a thousand species; and at least twenty thousand beetles and butterflies, of about seven thousand species; besides some quadrupeds and shells." A perfect museum of tropical natural history in the Pacific, and a quite sufficient explanation of the six years' delay which has occurred in the publication of his book. Of this book as a contribution to natural science and history we cannot speak too highly. It is full of fresh facts, and it is excellently written. The kind and quality of Mr. Wallace's material we shall illustrate by quotation. As a contributor of new facts for Mr. Charles Darwin, he has also been exceedingly prolific. The interesting questions of species and organic development have doubtless received from Mr. Wallace no inconsiderable service, and the great prophet of the development theory cannot but be very thankful for such able and enthusiastic disciples as the author of the "Malay Archipelago." At the same time we seem to become conscious, as we read, of a growing conviction that the Darwinians are students with monocular vision only—very clear, very safe, very deep vision of its kind, but wanting the natural complement and correction of a double-eyed power. However, as Mr. Wallace does not pretend to discuss the principles of the theory he desires to support, but aims only at affording correct information and exciting true scientific love for his favourite studies, we shall say nothing of the Darwinian notion, but help him, as far as our space will permit, to the worthy object he has in view. To this end, we shall let his volumes speak for themselves in extracts taken from them as samples of their rich and varied contents.

A capital map of Mr. Wallace's routes enables us to follow him easily in his eight years' wanderings. The Archipelago consists of (1) the Indo-Malay islands, comprising the Malay Peninsula and Singapore, Borneo, Java, and Sumatra; (2) the Timor group, comprising the islands of Timor, Flores, Sumbawa, Lombock, and several smaller ones; (3) the Celebes, with the Sula islands and Bouton; (4) the Moluccan group, comprising Bouru, Ceram, Batchian, Gilolo, and Morty, with the smaller islands of Ternate, Tidore, Makian, Kaióa, Amboyna, Banda, Goram, and Matabello; (5) the Papuan group, comprising the great island of New Guinea, with the Aru islands, Mysol, Salwatty, Waigiou, and others; and although the Ké islands belong to the Moluccas, Mr. Wallace describes them with the Papuan group for ethnological reasons.

Reversing the author's method, we shall present first descriptions of the human races in the Malay and Papuan groups. First of the Malays:—

Two very strongly contrasted races inhabit Archipelago—the Malays, occupying almost exclusively the larger western half of it, and the Papuans, whose headquarters are New Guinea and several of the adjacent islands. Between these in locality are found tribes who are also intermediate in their chief characteristics, and it is sometimes a nice point to determine whether they belong to one or the other race, or have been formed by a mixture of the two. The Malay is undoubtedly the most important of the two races, as it is the one which is the most civilised, which has come most into contact with Europeans, and which alone has any place in history. What may be called the true Malay races, as distinguished from others who have merely a Malay element in their language, present a considerable uniformity of physical and mental characteristics, while there are very great differences of civilisation and of language. They consist of four great and a few minor semi-civilised tribes, and a number of others who may be termed savages. The Malays proper inhabit the Malay peninsula, and almost all the coast regions of Borneo and Sumatra. They all speak the Malay language, or dialects of it; they write in the Arabic character, and are Mahometans in religion. The Javanese inhabit Java, part of Sumatra, Madura, Bali, and part of Lombock. They speak the Javanese and Kawi languages, which they write in a native character. They are now Mahometans in Java, but Brahmins in Bali and Lombock. The Bugis are the inhabitants of the greater parts of Celebes, and there seems to be an allied people in Sumbawa. They speak the Bugis and Macassar languages, with dialects, and have two different native characters in which they write these. They are all Mahometans. The fourth great race is that of the Tagalas in the Philippine Islands, about whom, as I did not visit those Islands, I shall say little. Many of them are now Christians, and speak Spanish as well as their native tongue, the Tagala. The Moluccan Malays, who inhabit chiefly Ternate, Tidore, Batchian, and Amboyna, may be held to form a fifth division of semi-civilised Malays. They are all Mahometans, but they speak a variety of curious languages, which seem compounded of Bugis and Javanese, with the languages of the savage tribes of the Moluccas. The savage Malays are the Dyaks of Borneo; the Battaks and other wild tribes of Sumatra; the Jakuns of the Malay Peninsula; the aborigines of Northern Celebes, of the Sula island, and of part of Bouru. The colour of all these varied tribes is a light reddish brown, with more or less of an olive tinge, not varying in any important degree over an extent of country as large as all southern Europe. The hair is equally constant, being invariably black and straight, and of a rather coarse texture, so that any lighter tint, or any wave or curl in it, is an almost certain proof of the admixture of some foreign blood. The face is nearly destitute of beard, and the breast and limbs are free from hair. The stature is tolerably equal, and is always considerably below that of the average European; the body is robust, the breast well developed, the feet small, thick, and short, the hands small and rather delicate. The face is a little broad, and inclined to be flat; the forehead is rather rounded, the brows low, the eyes black and very slightly oblique; the nose is rather small, not prominent, but straight and well-shaped, the apex a little rounded, the nostrils broad and slightly exposed; the cheek bones are rather prominent, the mouth large, the lips broad and well cut, but not protruding, the chin round and well-formed. In this description there seems little to object to on the score of beauty, and yet on the whole the Malays are certainly not handsome. In youth, however, they are often very good-looking, and many of the boys and girls up to 12 or 15 years of age are very pleasing, and some have countenances which are in their way almost perfect. I am inclined to think they lose much of their good looks by bad habits and irregular living. At a very early age they chew betel and tobacco almost incessantly; they suffer much want and exposure in their fishing and other excursions; their lives are often passed in alternate starvation and feasting, idleness and excessive labour; and this naturally produces premature old age and harshness of features. In character the Malay is impassive. He exhibits a reserve, diffidence, and even bashfulness, which is in some degree attractive, and leads the observer to think that the ferocious and bloodthirsty character imputed to the race must be grossly exaggerated. He is not demonstrative. His feelings of surprise, admiration, or fear are never openly manifested, and are probably not strongly felt. He is slow and deliberate in speech, and circuitous in introducing the subject he has come expressly to discuss. These are the main features of his moral nature, and exhibit themselves in every action of his life. Children and women are timid, and scream and run at the unexpected sight of a European. In the company of men they are silent, and are generally quiet and obedient. When alone the Malay is taciturn; he neither talks nor sings to himself. When several are paddling in a canoe, they occasionally chant a monotonous and plaintive song. He is cautious of giving offence to his equals. He does not quarrel easily about money matters; dislikes asking too frequently even for payment of his just debts, and will often give them up altogether rather than quarrel with his debtor. Practical joking is utterly repugnant to his disposition; for he is particularly sensitive to breaches of etiquette, or any

interference with the personal liberty of himself or another. As an example, I may mention that I have often found it very difficult to get one Malay servant to waken another. He will call as loud as he can, but will hardly touch, much less shake, his comrade. I have frequently had to waken a hard sleeper myself when on a land or sea journey.

The higher classes of Malays are well bred, as truly so as the most dignified of Europeans, but are also recklessly cruel at times, and indifferent to the value of life. It requires intimate association with them to know them correctly, and especially to avoid receiving and conveying one-sided, and therefore false, views of their character. The other most important race of the Archipelago is the Papuan:—

The typical Papuan race is in many respects the very opposite of the Malay, and it has hitherto been very imperfectly described. The colour of the body is a deep sooty brown or black, sometimes approaching, but never quite equalling, the jet-black of some negro races. It varies in tint, however, more than that of the Malay, and is sometimes a dusky-brown. The hair is very peculiar, being harsh, dry, and frizzly, growing in little tufts or curls, which in youth are very short and compact, but afterwards grow out to a considerable length, forming the compact frizzled mop which is the Papuans' pride and glory. The face is adorned with a beard of the same frizzly nature as the hair of the head. The arms, legs, and breast are also more or less clothed with hair of a similar nature. In stature the Papuan decidedly surpasses the Malay, and is perhaps equal, or even superior, to the average of Europeans. The legs are long and thin, and the hands and feet larger than in the Malays. The face is somewhat elongated, the forehead flattish, the brows very prominent; the nose is large, rather arched and high, the base thick, the nostrils broad, with the aperture hidden, owing to the tip of the nose being elongated; the mouth is large, the lips thick and protuberant. The face has thus an altogether more European aspect than in the Malay, owing to the large nose; and the peculiar form of this organ, with the more prominent brows and the character of the hair on the head, face, and body, enable us at a glance to distinguish the two races. I have observed that most of these characteristic features are as distinctly visible in children of ten or twelve years old as in adults, and the peculiar form of the nose is always shown in the figures which they carve for ornaments to their houses, or as charms to wear round their necks. The moral characteristics of the Papuan appear to me to separate him as distinctly from the Malay as do his form and features. He is impulsive and demonstrative in speech and action. His emotions and passions express themselves in shouts and laughter, in yells and frantic leapings. Women and children take their share in every discussion, and seemed little alarmed at the sight of strangers and Europeans. Of the intellect of this race it is very difficult to judge, but I am inclined to rate it somewhat higher than that of the Malays, notwithstanding the fact that the Papuans have never yet made any advance towards civilisation. It must be remembered, however, that for centuries the Malays have been influenced by Hindoo, Chinese, and Arabic immigration, whereas the Papuan race has only been subjected to the very partial and local influence of Malay traders. The Papuan has much more vital energy, which would certainly greatly assist his intellectual development. Papuan slaves show no inferiority of intellect compared with Malays, but rather the contrary; and in the Moluccas they are often promoted to places of considerable trust. The Papuan has a greater feeling for art than the Malay. He decorates his canoe, his house, and almost every domestic utensil with elaborate carving, a habit which is rarely found among tribes of the Malay race. In the affections and moral sentiments, on the other hand, the Papuans seem very deficient. In the treatment of their children they are often violent and cruel; whereas the Malays are almost invariably kind and gentle, hardly ever interfering at all with their children's pursuits and amusements, and giving them perfect liberty at whatever age they wish to claim it. But these very peaceful relations between parents and children are no doubt, in a great measure, due to the listless and apathetic character of the race, which never leads the younger members into serious opposition to the elders; while the harsher discipline of the Papuans may be chiefly due to that greater vigour and energy of mind which always, sooner or later, leads to the rebellion of the weaker against the stronger,—the people against their rulers, the slave against his master, or the child against its parent. It appears, therefore, that, whether we consider their physical conformation, their moral characteristics, or their intellectual capacities, the Malay and Papuan races offer remarkable differences and striking contrasts. The Malay is of short stature, brown-skinned, straight-haired, beardless, and smooth-bodied. The Papuan is taller, is black-skinned, frizzly-haired, bearded, and hairy-bodied. The former is broad-faced, has a small nose, and flat eyebrows; the latter is long-faced, has a large and prominent nose, and projecting eyebrows. The Malay is bashful, cold, undemonstrative,

and quiet; the Papuan is bold, impetuous, excitable, and noisy. The former is grave and seldom laughs; the latter is joyous and laughter-loving,—the one conceals his emotions, the other displays them.

Mr. Wallace says he has not seen the black woolly-haired races of the Philippines and the Malay Peninsula, and he takes his impressions from descriptions already published. But he has seen and had pretty close knowledge of a race of creatures which, if there be anything in the Darwin theory, we ought to look upon with a respectful feeling of distant relationship. The following incidents which occurred in Borneo are exceedingly interesting:—

One of my chief objects in coming to stay at Simunion was to see the Orang-utan (or great manlike ape of Borneo) in his native haunts, to study his habits, and obtain good specimens of the different varieties and species of both sexes, and of the adult and young animals. In all these objects I succeeded beyond my expectations, and will now give some account of my experience in hunting the orang-utan, or "mias," as it is called by the natives; and as this name is short, and easily pronounced, I shall generally use it in preference to Simia satyrus, or orang-utan. Just a week after my arrival at the mines, I first saw a mias. I was out collecting insects, not more than a quarter of a mile from the house, when I heard a rustling in a tree near, and, looking up, saw a large red-haired animal moving slowly along, hanging from the branches by its arms. It passed on from tree to tree till it was lost in the jungle, which was so swampy that I could not follow it. This mode of progression was, however, very unusual, and is more characteristic of the hylobates than of the orang. I suppose there was some individual peculiarity in this animal, or the nature of the trees just in this place rendered it the most easy mode of progression. About a fortnight afterwards I heard that one was feeding in a tree in the swamp just below the house, and, taking my gun, was fortunate enough to find it in the same place. As soon as I approached, it tried to conceal itself among the foliage; but I got a shot at it, and the second barrel caused it to fall down almost dead, the two balls having entered the body. This was a male, about halfgrown, being scarcely three feet high. On April 26, I went out shooting with two Dyaks, when we found another about the same size. It fell at the first shot, but did not seem much hurt, and immediately climbed up the nearest tree, when I fired, and it again fell, with a broken arm and a wound in the body. The two Dyaks now ran up to it, and each seized hold of a hand, telling me to cut a pole, and they would secure it. But although one arm was broken and it was only a half-grown animal, it was too strong for these young savages, drawing them up towards its mouth notwithstanding all their efforts, so that they were again obliged to leave go, or they would have been seriously bitten. It now began climbing up the tree again; and, to avoid trouble, I shot it through the heart. On May 2, I again found one on a very high tree, when I had only a small 80-bore gun with me. However, I fired at it, and on seeing me it began howling in a strange voice like a cough, and seemed in a great rage, breaking off branches with its hands and throwing them down, and then soon made off over the tree-tops. I did not care to follow it, as it was swampy, and in parts dangerous, and I might easily have lost myself in the eagerness of pursuit. On the 12th of May I found another, which behaved in a very similar manner, howling and hooting with rage, and throwing down branches. I shot at it five times, and it remained dead on the top of the tree, supported in a fork in such a manner that it would evidently not fall. I therefore returned home, and luckily found some Dyaks, who came back with me, and climbed up the tree for the animal. This was the first full-grown specimen I had obtained; but it was a female, and not nearly so large or remarkable as the full-grown males. It was, however, 3 ft. 6 in. high, and its arms stretched out to a width of 6 ft. 6 in. I preserved the skin of this specimen in a cask of arrack, and prepared a perfect skeleton, which was afterwards purchased for the Derby Museum. Only four days afterwards some Dyaks saw another mias near the same place, and came to tell me. We found it to be a rather large one, very high up on a tall tree. At the second shot it fell rolling over, but almost immediately got up again and began to climb. At a third shot it fell dead. This was also a full-grown female, and while preparing to carry it home, we found a young one face downwards in the bog. This little creature was only about a foot long, and had evidently been hanging to its mother when she first fell. Luckily it did not appear to have been wounded, and after we had cleaned the mud out of its mouth it began to cry out, and seemed quite strong and active. While carrying it home it got its hands in my beard, and grasped so tightly that I had great difficulty in getting free, for the fingers are habitually bent inwards at the last joint so as to form complete hooks. At this time it had not a single tooth, but a few days afterwards it cut its two lower front teeth. Unfortunately, I had no milk to give it, as neither Malays, Chinese, nor Dyaks ever use the article, and I in vain inquired for any female animal that could suckle my little infant. I was therefore obliged to give it rice water from a bottle with a quill

in the cork, which after a few trials it learned to suck very well. This was very meagre diet, and the little creature did not thrive well on it, although I added sugar and cocoa-nut milk occasionally, to make it more nourishing. When I put my finger in its mouth it sucked with great vigour, drawing in its cheeks with all its might in the vain effort to extract some milk, and only after persevering a long time would it give up in disgust, and set up a scream very like that of a baby in similar circumstances. When handled or nursed, it was very quiet and contented, but when laid down by itself would invariably cry; and for the first few nights was very restless and noisy. I fitted up a little box for a cradle, with a soft mat for it to lie upon, which was changed and washed every day; and I soon found it necessary to wash the little mias as well. After I had done so a few times, it came to like the operation, and as soon as it was dirty would begin crying, and not leave off till I took it out and carried it to the spout, when it immediately became quiet, although it would wince a little at the first rush of the cold water, and make ridiculously wry faces while the stream was running over its head. It enjoyed the wiping and rubbing dry amazingly, and when I brushed its hair seemed to be perfectly happy, lying quite still with its arms and legs stretched out while I thoroughly brushed the long hair of its back and arms. For the first few days it clung desperately with all four hands to whatever it could lay hold of, and I had to be careful to keep my beard out of its way, as its fingers clutched hold of hair more tenaciously than anything else, and it was impossible to free myself without assistance. When restless, it would struggle about with its hands up in the air trying to find something to take hold of, and, when it had got a bit of stick or rag in two or three of its hands, seemed quite happy. For want of something else, it would often seize its own feet, and after a time it would constantly cross its arms and grasp with each hand the long hair that grew just below the opposite shoulder. The great tenacity of its grasp soon diminished, and I was obliged to invent some means to give it exercise and strengthen its limbs. For this purpose I made a short ladder of three or four rounds, on which I put it to hang for a quarter of an hour at a time. At first it seemed much pleased, but it could not get all four hands in a comfortable position, and, after changing about several times, would leave hold of one hand after the other, and drop on to the floor. Sometimes when hanging only by two hands, it would loose one, and cross it to the opposite shoulder, grasping its own hair; and, as this seemed much more agreeable than the stick, it would then loose the other and tumble down, when it would cross both and lie on its back quite contentedly, never seeming to be hurt by its numerous tumbles. Finding it so fond of hair, I endeavoured to make an artificial mother, by wrapping up a piece of buffalo-skin into a bundle, and suspending it about a foot from the floor. At first this seemed to suit it admirably, as it could sprawl its legs about and always find some hair, which it grasped with the greatest tenacity. I was now in hopes that I had made the little orphan quite happy; and so it seemed for some time, till it began to remember its lost parent, and try to suck. It would pull itself up close to the skin, and try about everywhere for a likely place; but, as it only succeeded in getting mouthfuls of hair and wool, it would be greatly disgusted, and scream violently, and, after two or three attempts, let go altogether. One day it got some wool into its throat, and I thought it would have choked, but after much gasping it recovered, and I was obliged to take the imitation mother to pieces again, and give up this last attempt to exercise the little creature. After the first week I found I could feed it better with a spoon, and give it a little more varied and more solid food. Well-soaked biscuit mixed with a little egg and sugar, and sometimes sweet potatoes, were readily eaten; and it was a never failing amusement to observe the curious changes of countenance by which it would express its approval or dislike of what was given to it. The poor little thing would lick its lips, draw in its cheeks, and turn up its eyes with an expression of the most supreme satisfaction when it had a mouthful particularly to its taste. On the other hand, when its food was not sufficiently sweet or palatable, it would turn the mouthful about with its tongue for a moment as if trying to extract what flavour there was, and then push it all out between its lips. If the same food was continued, it would set up a scream and kick about violently, exactly like a baby in a passion.

The habits and food of the mias or orang-utan are thus described:—

It is a singular and very interesting sight to watch a mias making his way leisurely through the forest. He walks deliberately along some of the larger branches, in the semi-erect attitude which the great length of his arms and the shortness of his legs cause him naturally to assume; and the disproportion between these limbs is increased by his walking on his knuckles, not on the palm of the hand, as we should do. He seems always to choose those branches which intermingle with an adjoining tree, on approaching which he stretches out his long arms, and, seizing the opposing boughs, grasps them together with both hands, seems to try their strength, and then deliberately swings himself across

to the next branch, on which he walks along as before. He never jumps or springs, or even appears to hurry himself, and yet manages to get along almost as quickly as a person can run through the forest beneath. The long and powerful arms are of the greatest use to the animal, enabling it to climb easily up the loftiest trees, to seize fruits and young leaves from slender boughs which will not bear its weight, and to gather leaves and branches with which to form its nest. I have already described how it forms a nest when wounded, but it uses a similar one to sleep on almost every night. This is placed low down, however, on a small tree not more than from twenty to fifty feet from the ground, probably because it is warmer and less exposed to wind than higher up. Each mias is said to make a fresh one for himself every night; but I should think that is hardly probable, or their remains would be much more abundant; for though I saw several about the coal-mines, there must have been many orangs about every day, and in a year their deserted nests would become very numerous. The Dyaks say that, when it is very wet, the mias covers himself over with leaves of pandanus, or large ferns, which has perhaps led to the story of his making a hut in the trees. The Orang does not leave his bed till the sun has well risen and has dried up the dew upon the leaves. He feeds all through the middle of the day, but seldom returns to the same tree two days running. They do not seem much alarmed at man, as they often stared down upon me for several minutes, and then only moved away slowly to an adjacent tree. After seeing one, I have often had to go half a mile or more to fetch my gun, and in nearly every case have found it on the same tree, or within a hundred yards, when I returned. I never saw two full-grown animals together, but both males and females are sometimes accompanied by half-grown young ones, while at other times three or four young ones were seen in company. Their food consists almost exclusively of fruit, with occasionally leaves, buds, and young shoots. They seem to prefer unripe fruits, some of which were very sour, others intensely bitter, particularly the large red, fleshy arillus of one which seemed an especial favourite. In other cases they eat only the small seed of a large fruit, and they almost always waste and destroy more than they eat, so that there is a continual rain of rejected portions below the tree they are feeding on. The durian is an especial favourite, and quantities of this delicious fruit are destroyed wherever it grows surrounded by forest, but they will not cross clearings to get at them. It seems wonderful how the animal can tear open this fruit, the outer covering of which is so thick and tough, and closely covered with strong conical spines. It probably bites off a few of these first, and then, making a small hole, tears open the fruit with its powerful fingers. The mias rarely descends to the ground, except when, pressed by hunger, it seeks for succulent shoots by the river side; or, in very dry weather, has to search after water, of which it generally finds sufficient in the hollows of leaves. Once only I saw two half-grown orangs on the ground in a dry hollow at the foot of the Simunjon hill. They were playing together, standing erect, and grasping each other by the arms. It may be safely stated, however, that the orang never walks erect, unless when using its hands to support itself by branches overhead or when attacked. Representations of its walking with a stick are entirely imaginary. The Dyaks all declare that the Mias is never attacked by any animal in the forest, with two rare exceptions; and the accounts I received of these are so curious that I give them nearly in the words of my informants, old Dyak chiefs, who had lived all their lives in the places where the animal is most abundant. The first of whom I inquired said: "No animal is strong enough to hurt the mias, and the only creature he ever fights with is the crocodile. When there is no fruit in the jungle, he goes to seek food on the banks of the river, where there are plenty of young shoots that he likes, and fruits that grow close to the water. Then the crocodile sometimes tries to seize him, but the mias gets upon him, and beats him with his hands and feet, and tears him and kills him." He added that he had once seen such a fight, and that he believes that the mias is always the victor. My next informant was the Orang Kaya, or chief of the Balow Dyaks, on the Simunjon River. He said: "The mias has no enemies; no animals dare attack it but the crocodile and the python. He always kills the crocodile by main strength, standing upon it, pulling open its jaws, and ripping up its throat. If a python attacks a mias, he seizes it with his hands, and then bites it, and soon kills it. The mias is very strong; there is no animal in the jungle so strong as he."

Perhaps nowhere else than in these delightful volumes do we get an observer's fresh and thoroughly reliable account of the various kinds of birds of paradise. During the five years' residence and travel in Celebes, Mr. Wallace was not able to purchase "skins of half the species which Sesson, 40 years ago, obtained during a few weeks in the same countries. The birds are now much more difficult to secure by any means whatever, and Mr. Wallace imputes this fact chiefly to their having been sought after by the Dutch officials through the Sultan of Tidore. Annual expeditions are made,

conducted by chiefs, to exact tribute. These chiefs "have had orders to get all the rare sorts of paradise birds; and as they pay little or nothing for them (it being sufficient to say they are for the Sultan), the head men of the coast villages would for the future refuse to purchase them from the mountaineers, and confine themselves instead to the commoner species, which are less sought after by amateurs, but are a more profitable merchandise." No doubt the majority of readers have seen specimens of the "greater" and "lesser" birds of paradise. We need not transcribe, therefore, Mr. Wallace's descriptions of them; but the following notes upon the cause of their varied plumage and colouring, with further descriptions of less-known species, cannot fail to be attractive:—

The successive stages of development of the colours and plumage of the birds of paradise are very interesting, from the striking manner in which they accord with the theory of their having been produced by the simple action of variation, and the cumulative power of selection by the females, of those male birds which were more than usually ornamental. Variations of colour are of all others the most frequent and the most striking, and are most easily modified and accumulated by man's selection of them. We should expect, therefore, that the sexual differences of colour would be those most early accumulated and fixed, and would therefore appear soonest in the young birds; and this is exactly what occurs in the paradise birds. Of all variations in the form of birds' feathers, none are so frequent as those in the head and tail. These occur more or less in every family of birds, and are easily produced in many domesticated varieties, while unusual developments of the feathers of the body are rare in the whole class of birds, and have seldom or never occurred in domesticated species. In accordance with these facts, we find the scale-formed plumes of the throat, the crests of the head, and the long cirrhi of the tail, all fully developed before the plumes which spring from the side of the body begin to make their appearance. If, on the other hand, the male paradise birds have not acquired their distinctive plumage by successive variations, but have been as they are now from the moment they first appeared upon the earth, this succession becomes at the least unintelligible to us, for we can see no reason why the changes should not take place simultaneously, or in a reverse order to that in which they actually occur. The red bird of paradise offers a remarkable case of restricted range, being entirely confined to the small island of Waigiou, off the north-west extremity of New Guinea, where it replaces the allied species found in the other islands. The three birds just described form a well-marked group, agreeing in every point of general structure, in their comparatively large size, the brown colour of their bodies, wings, and tail, and in the peculiar character of the ornamental plumage which distinguishes the male bird. The group ranges nearly over the whole area inhabited by the family of the paradiseidæ, but each of the species has its own limited region, and is never found in the same district with either of its close allies. To these three birds properly belongs the generic title paradisea, or true paradise bird. The next species is the paradisea regia of Linnæus, or king bird of paradise, which differs so much from the three preceding species as to deserve a distinct generic name, and it has accordingly been called cicinnurus regius. By the Malays it is called "Burong rajah," or King Bird, and by the natives of the Aru Islands "Goby-goby." This lovely little bird is only about six and a half inches long, partly owing to the very short tail, which does not surpass the somewhat square wings. The head, throat, and entire upper surface are of the richest glossy crimson red, shading to orange-crimson on the forehead, where the feathers extend beyond the nostrils more than half-way down the beak. The plumage is excessively brilliant, shining in certain lights with a metallic or glassy lustre. The breast and belly are pure silky white, between which colour and the red of the throat there is a broad band of rich metallic green, and there is a small spot of the same colour close above each eye. From each side of the body beneath the wing, springs a tuft of broad delicate feathers about an inch and a half long, of an ashy colour, but tipped with a broad band of emerald green, bordered within by a narrow line of buff. These plumes are concealed beneath the wing, but when the bird pleases, can be raised and spread out so as to form an elegant semi circular fan on each shoulder. But another ornament, still more extraordinary, and if possible more beautiful, adorns this little bird. The two middle tail feathers are modified into very slender wire-like shafts, nearly six inches long, each of which bears at the extremity, on the inner side only, a web of an emerald green colour, which is coiled up into a perfect spiral disc, and produces a most singular and charming effect. The bill is orange yellow, and the feet and legs of a fine cobalt blue. The female of this little gem is such a plainly-coloured bird that it can at first sight hardly be believed to belong to the same species. The upper surface is of a dull earthy brown, a slight tinge of orange red appearing only on the margins of the quills. Beneath it is of a paler yellowish brown, scaled and banded with narrow dusky markings. The young males are exactly like the female, and they no doubt

undergo a series of changes as singular as those of paradisea rubra; but, unfortunately, I was unable to obtain illustrative specimens. This exquisite little creature frequents the smaller trees in the thickest parts of the forest, feeding on various fruits, often of a very large size for so small a bird. It is very active both on its wings and feet, and makes a whirring sound while flying, something like the South American manakins. It often flutters its wings and displays the beautiful fan which adorns its breast, while the star-bearing tail wires diverge in an elegant double curve. It is tolerably plentiful in the Aru Islands, which led to its being brought to Europe at an early period along with paradisea apoda. It also occurs in the island of Mysol, and in every part of New Guinea which has been visited by naturalists. We now come to the remarkable little bird called the "Magnificent," first figured by Buffon, and named paradisea speciosa by Boddaert, which, with one allied species, has been formed into a separate genus by Prince Buonaparte, under the name of diphyllodes, from the curious double mantle which clothes the back. The head is covered with short brown velvety feathers, which advance on the back so as to cover the nostrils. From the nape springs a dense mass of feathers of a straw-yellow colour, and about one and a half inches long, forming a mantle over the upper part of the back. Beneath this, and forming a band about one-third of an inch beyond it, is a second mantle of rich, glossy, reddish-brown feathers. The rest of the back is orange-brown, the tail-coverts and tail dark bronzy, the wings light orange-buff. The whole under surface is covered with an abundance of plumage springing from the margins of the breast, and of a rich deep green colour, with changeable hues of purple. Down the middle of the breast is a broad band of scaly plumes of the same colour, while the chin and throat are of a rich metallic bronze. From the middle of the tail spring two narrow feathers of a rich steel blue, and about ten inches long. These are webbed on the inner side only, and curve outward, so as to form a double circle. From what we know of the habits of allied species we may be sure that the greatly developed plumage of this bird is erected and displayed in some remarkable manner. The mass of feathers on the under surface are probably expanded into a hemisphere, while the beautiful yellow mantle is no doubt elevated so as to give the bird a very different appearance from that which it presents in the dried and flattened skins of the natives, through which alone it is at present known. The feet appear to be dark blue. This rare and elegant little bird is found only on the mainland of New Guinea, and in the island of Mysol. A still more rare and beautiful species than the last is the diphyllodes wilsoni, described by Mr. Cassin from a native skin in the rich museum of Philadelphia. The same bird was afterwards named *diphyllodes respublica*, by Prince Buonaparte, and still later, schleyelia calva, by Dr. Bernstein, who was so fortunate as to obtain fresh specimens in Waigiou. In this species the upper mantle is sulphur yellow, the lower one and the wings pure red, the breast plumes dark green, and the lengthened middle tail feathers much shorter than in the allied species. The most curious difference is, however, that the top of the head is bald, the bare skin being of a rich cobalt blue, crossed by several lines of black velvety feathers. It is about the same size as diphyllodes speciosa, and is no doubt entirely confined to the island of Waigiou. The female, as figured and described by Dr. Bernstein, is very like that of cicinnurus regius, being similarly banded beneath; and we may therefore conclude that its near ally, the "Magnificent," is at least equally plain in this sex, of which specimens have not yet been obtained.

Our extracts are simply specimens of a mass of entertaining and instructive material which will amply repay attentive perusal, and will doubtless admirably serve the purpose of its author in creating an appetite for correct and extensive knowledge of natural history based upon sound scientific principles, and digested with true scientific ability.

The Alfred Russel Wallace Page, Charles H. Smith, 2021.