

be careful observers; and it was therefore with much pleasure that I had an opportunity of observing them in an example which was presented to me, and which was embarked on board of a ship at Cadiz, with several others, the larger number of which died on the voyage to England. It came to my hands about the end of the month of July in perfect health; and when presented to me the only caution given with it was, that I should be careful to provide it with water, and, it was added, that those which had died on the passage had refused it, whilst such as drank freely remained alive. To this observation and recommendation, however, I paid no attention; as a Mr. Jackson, who studied the habits of this creature in its native country, in his *Account of the Empire Morocco*, had asserted that the chameleon was not accustomed to drink.

The example which thus came into my possession measured ten inches in length, of which the tail was four inches and a half. The head compressed, jaws of equal length, furnished with slight cartilaginous teeth. From above, the upper jaw commenced on each side a ridge, which passing backward formed an elevated crest of a triangular shape, the posterior edges of which passed down, one on each side, to the hindmost angles of the jaw. The eye large, projecting, conical, covered with the common skin; the pupil deeply seated in a hole scarcely larger than would be made with a pin. It is black and lively, and encircled with a gold coloured iris that is not wider than a thread. The projecting eyeball is capable of very extensive movement, and the movements of each eye are independent of its opposite; so that they are rarely seen directed to one object, except when this creature is intent on seizing its prey. The body is usually much compressed, but on the inhalation of air it becomes greatly distended, and it may be readily supposed that the difference in its appearance from this cause was what led to the opinion that air formed the material portion of its diet. The back is ridged, and, on account of the tubercles on it, slightly serrated, the belly also has an obscure ridge. Above the hind legs the body is slender; the tail flattened at its origin, round and tapering through its posterior half; the legs long, those behind longest and with a very extensive motion at their articulation with the body: the claws sharp, five on each leg, and united in sets; that is, on the anterior legs two of the toes are joined together on the outward side and three inward, on the hind legs, three are joined together on the outward side and two inward. The body is covered with slight papillous elevations.

This creature moves slowly and with much apparent deliberation, especially when on the ground; but its favourite place of resort is a bush or branched stick, along which it proceeds with great care, never losing its grasp with one hand—as its singularly formed feet may well be termed—until it has secured a firm holdfast with the others; and the tail at the same time is employed in keeping itself safe by twisting round the branch on which it is to advance. This last named expedient is especially needed, in order to keep the body erect when on a slender twig; since for this purpose the feet alone appear to be of comparatively small service.

The colour of the chameleon is subject to continual change; but if a creature that rarely retains the same hue for ten minutes together can be said to possess one which may be termed its own, it is dusky brown, or almost black nearly approaching to the darkness of soot. This it is which it assumes when it compresses its sides, and places its body with the plane of its surface, to be exposed to the direct beams of the sun, so as to receive the full benefit of its rays; of which, as we shall have further to remark, the light is of more importance to its health and comfort than the heat. And when thus enjoying itself even the mouth is extended to receive the influence, although at other times it is kept closely shut. It was noticed also that as a dingy black was the common colour when enjoying itself in the usual habit of basking in the sun, a light, or whitish yellow prevails when it is asleep, during which time it never changes its position.

Desirous of obtaining a knowledge of the temperature of its body, at nine o'clock of the evening of the 18th of August, when a thermometer in the room stood at 64°, this instrument was moved carefully to the side of the chameleon, when the colour changed from yellow to greenish, and then to deeper green, followed by purple spots, and it expanded itself by inhaling air, an action which sometimes is accompanied with a rushing or hissing sound, the lungs appearing to occupy the lower portion of the belly. While the thermometer lay in contact with its side, in a few minutes it rose to 68°; and a few hours afterwards, when the animal was still asleep and distended with air, with the colour a light yellowish green, and the thermometer in the room stood at 63°, on its being applied to the side it again rose to 68°. At this time, although the touch of the thermometer did not cause it to awake, two rows of purple spots made their appearance on the former ground: and it was observed that whenever two rows of spots were produced they were large, and in one situation and direction.

On another evening, at eleven o'clock, when the thermometer stood at 62°, and the chameleon was asleep, with the colour light yellow, although the touch of the instrument did not cause it to awake, yet the colour changed to darker, and it became covered with numerous purple lines; and then, in a few minutes the colour was dark green with obscure purple spots. But both sides do not always adopt the same colours, for while basking in the sun with the side towards the light a very dark brown, the shaded side was lighter, with green tints and two large rows of purple spots, and yet sometimes spots in the same order are altogether white. When asleep at night, the colour was light yellow with two rows of white spots, on holding a lighted candle at only a sufficient distance to communicate warmth, the side thus acted on became of a uniform brown, while the other side continued of the former light yellow. Afterwards, while still asleep, and the colour was yellow with two rows of white spots, when a candle was held within the distance of three inches, the side exposed to the candle became brown with a row of deeper brown spots, and the other side continued with the unchanged light yellow and white spots; the change when it took place not requiring more than a minute, and within a minute afterwards, on removing the candle both sides were of a greenish yellow with two rows of large purple spots. When the stick on which it rested was touched gently, without waking it, it became instantly covered all over with minute brown spots. On another occasion, when the colour was altogether yellow, a book was held so as to cast a shade on the anterior part of the body, while a candle was held within four inches of the hindmost portion; and then presently the illuminated part changed to a light brown, while the shaded portion remained as before; and when the screen was remove the exact limit of the shade was visible. When again the colour was yellow with two rows of white spots, in breathing on it so gently that nothing beyond the warmth of the breath could have been perceived, it immediately became covered with minute brown spots on both its sides; and at all times it was discerned by examination with a lens, that the colours existed entirely in the very small tubercles with which the body was covered, and not in the skin which lay between them.

I had hitherto paid no attention to the question whether it was necessary to its health that it should be supplied with drink; but it was not long before an opportunity was afforded for removing all doubt on that subject. Whilst the chameleon was near me at a window, basking in the sun, I was engaged in drawing the figure of a fish; and in order to preserve it alive, it had been wrapped up in seaweed that was charged with salt water. Having removed the weed, some fresh water was poured on the fish, on perceiving which the chameleon immediately left its station at the distance of about a foot, and hastened with unusual speed to the place; where it scrambled into the vessel, and began to lap the water by repeatedly placing its tongue in contact with the fish, in which action the fleshy portion of its tongue being thrust a little beyond the lips, and then lifting its head, swallowed the water in repeated efforts. When the fish was removed to different parts of the vessel, the chameleon followed it, without being alarmed, as it usually was, at my meddling with it. In order to ascertain whether it was the salt that might be still on the fish which attracted its attention, I sprinkled a portion of the fish with salt; but when it touched this part with its tongue, it turned away to where the water was fresh; but having lapped it for a moment it returned and applied its tongue to a portion of the fish which I had newly turned up; and it was from this manner of proceeding that I concluded its habits to be to quench its thirst by taking moisture, from some fixed surface rather than by drinking from a pool or floating liquid. At this time the quantity of water swallowed appeared to be equal to a tablespoonful, and when satisfied its sides had become very much distended. From the 23rd of August this chameleon did not again drink until the 12th of September; and I afterwards observed that it required water once in about a fortnight. As the opinion that the chameleon does not drink was thus proved and error, so it seemed equally clear that the popular opinion of its assuming the colour of any substance on which it rests is equally so. It has passed over and rested on carpets variegated with different colours—a large green cloth, a large growing myrtle, with other coloured substances, without my being able to discern that there was ever any connection between the colour of its surface and that of the material on which it rested. On one occasion, indeed, there appeared something like this; for when it had made its escape to the outside of the window, it became so much like the stones on which it rested—black and white—as to escape observation for a considerable time; but it has been known to assume precisely the same appearance under other circumstances, and when surrounded with substances very different in colour. It was not kept in greater restraint than was afforded by a large room, but after continuing for several hours on a green or scarlet cloth, or on green vegetables,