

No. 25  
72. *Plan of*  
Vol. 8 1872-4

AN ANNUAL REPORT

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area, and the spines—most or rather their location. The author then treats of the scales made by animals, birds, and reptiles, in order to justify their position. With his remarks upon these subjects the general reader will generally agree, but scarcely so with his efforts to prove his favorite topic of evolution by an explanation of the origin of the rattle of the rattlesnake. Many snakes when angry vibrate their tails. In the instance, an allied snake to the rattlesnake, the tail ends in a single large lance-shaped point or scale. "Now if we suppose that the end of the tail of some ancient American snake was enlarged, and was covered by a single large scale, this could hardly have been cut off at the successive periods. In this case it would have been permanently retained, and at each period of growth, as the snake grew larger, a new scale larger than the last would have been formed above it, and would have been likewise retained. The foundation for the development of a rattle would thus have been laid, and it would have been habitually used if the species, like so many others, vibrated its tail whenever it was irritated. That the rattle has since been specially developed to serve as an efficient sound-producing instrument there can hardly be a doubt, for even the variations included within the extremity of the tail have been altered in shape and colour." Had an opponent of Mr. Darwin's theory written this as a criticism upon the theory of evolution, he would have been met with a charge of indignation from the advocates of that theory. In fact, a more progressive notion was never broached. A snake finds that a number of its cast-off scales adhering to its tail make a noise when it vibrates that tail, and so strikes terror into his enemy; he accordingly sets to to improve the rattle which nature has given him, and accordingly, after generational thinking, waiting, and waiting, the descendant snake manages to arrange the vibrations of his tail, to make them into a rattle, and to dispose with the exterior branch of scales which had served his ancestor as a makeshift during the process of evolution. We should have thought that the new rattle with the enlarged vibrations would have been far more probably formed by some rival snake to the original with the rattle of scales. The rival, besides at the sound of this rattle, had persistently tried to do likewise. Nature not having furnished him with the large scale suitable for the purpose, he had set to work, and after many generations of descendants, all found upon carrying out the ancestral idea, and striving and waiting, the rattle with the vibrations was achieved, and the original snake with the cast-off scale rattle was entirely obsolete, and disappeared off the face of the earth from sheer despair. This appears to us to be greatly the most probable version, and we should advise Mr. Darwin to use it, instead of the present palpably defective one, in his next edition.

Turning to the gestures and expressions of emotion among the human race, considerable space is devoted to weeping. Infants do not weep—that is, do not shed tears—until from 100 to 120 days old, although the glands of the eye are capable of secreting tears, as is proved by a copious outflow in case of any injury or irritation to the eye.

"It would appear as if the lacrymal glands required some stimulus in the infant to induce them to secrete tears, but in the adult it is evident that some emotion or various external causes are sufficient to induce them to secrete tears, and that we are not surprised. This is all the more likely with a view to weeping which must have been acquired since the period when man branched off from the common progenitor of the great flock and of the non-weeping anthropomorphous ape."

Civilized men do not weep from pain, because to do so would be thought unusually strange, however, and human beings weep freely and copiously from very slight causes. Sighing appears peculiar to the human species, although all the lower animals groan or cry from pain, and some shed tears. Infants, however, do not sigh.

"The necessary movements are partly voluntary and partly involuntary, and I apprehend that sipping is at least in part due to children having some power to contract the early tendency their eyes open and to stop their mouths, but soon having lost power over their respiratory muscles, these continue for a time to act in an involuntary or spasmodic manner, after having been brought into action by pain."

Mr. Darwin agrees with Sir C. Bell that the eyes are closed by infants when screaming, and by adults when coughing, sneezing, or other violent exertions, because the blood is by such action driven so violently into the head that the eyes might suffer serious injury were not the eyelids closed freely upon it, so as to strengthen and support it. Mr. Darwin points out that weeping is generally accompanied by tight pressure of the eyelids, and concludes that the abundant production of tears is greatly due to this pressure upon the glands. It may have some such effect, but when we see the number of people who cry copiously at an affecting spectacle, at a sermon, or while reading a touching story, and notice the tears streaming down while the eyes are open and fixed either upon the stage or the pages of the book, we feel that there cannot be much force in this theory. The motions of grief, joy, and anger are gone into with equal minuteness, and the action of the different muscles brought into play clearly explained. In his chapter on "Smiling and Infancy," again, Mr. Darwin makes a great deal of the fact that dogs show their canine teeth when snarling at each other, and that man occasionally do the same. It is a disappointment of course to find that the monkey tribe do not snarl and show their canine teeth; still he looks upon it evidently as a proof that man is a descendant of the dog. Now, in fact, a man seldom does show his canine teeth when snarling or snarling with another man. Most of us have seen quails in our thimble, and will we think agree that the drawing up of a lip to show the canine teeth upon one or both sides of the mouth is rare in the extreme. When it does take place it is as a sneeze, and then it accompanies a curve or flexion of one of the nostrils, and it would be certainly drawing just upon my credulity to say that the muscles of the nostril and lip are mutually affected than to urge that the snarl is a proof of my dog-ancestry. It is a great pity that a work so full of observation, of research, and of thought as this one before us should be marred by such mistakes as these we have mentioned. However, they are few and far between, and detract but slightly from the real merit and value of the work. THE UNIVERSITY OF CHICAGO.