25 ounces. Do not apply any logic to this evidence; my brain may weigh 33 ounces, and another man's may weigh 64, without his mental capacity being equal to mine. The extent of the so- called "gray" matter, however, as indicated by the number and complexity of the convolutions, may be a partial index to the mental capacity of the individual. In considering brain-weight, the body-weight should always be taken into account.

The process by which man has attained his position in the zoological scale has not been due to physical strength, for he has conquered animals possessing a far greater strength. His supremacy in the struggle or existence has been due to the superiority of his brain development.

Man possesses many structures of no possible present use, which cannot be explained upon any basis, except that of descent from lower forms of life, where they were of value. I have often referred in other articles to the rudimentary muscles for moving the ears, and the muscles in the skin, which, in the lower animls, serve to erect the hair, but which, in man, have no other function than to cause the "goose- flesh" of fear or cold. The pineal gland is, in all probability, the remnant of a third eye, at times distinguishable, though not operative, in the young of the New Zealand reptile, the sphenodon. This gland was formerly regarded by orthodox people as the seat of the soul. The vermiform appendix, which many surgeons so dearly love to remove, is a remnant of a herbiverous ancestor which required a large-sized caecum for the necessary retardation of a too rapid process of digestion. The use of the pitutary body, which is at the base of the nose, is still a mystery.

It is true, of course, that we cannot produce the complete palaeontological history of the human animal, as we can the history of the crocodiles, the rhinoceroses and the horses, partly because palaeontology is a comparatively new science, partly because no thorough search has been systematically made—perhaps because the land of man's ancestors is now under the sea. We have, however, such evidence as the Neanderthal man, found in Prussia, about 1857, and the Pithecanthropus Erectus, found in Java about five years ago. The former appears to have been a cave-dweller, and his skull differs from that of any known man. The latter ought to satisfy the imagination of those who speculate concerning a "missing link." Some interesting pictures of the skull have appeared in a popular magazine.

One may assert that all the evidence of palaeontology, of zoology, of comparative anatomy and embryology is unimportant, because the true distinction between mankind and the other animals is to be found in the region of mind and morals.

Now, as to the absence of language among the lower forms of life—of course Darwin saw this difficulty—what is language, I ask. It is the communication of thought, feeling, ideas generally to others by means of articulate sounds. Can we be sure that the lower animals are not possessed of language in this sense? I trow not. Upon the other hand a very little observation will convince anybody that many animals, not only can, but do convey to their comrades their feelings and desires. And he, indeed, will be a bold man who is prepared to deny that the numerous sounds emitted by animals play no part in this conveyance. Is there, I ask, a greater gap between the language used by such animals and the few harsh sounds employed by the lowest savages, than between the language of the lowest human beings and the elaborate speech of a highly educated American or European? The sounds emitted by dogs or horses may seem few, but it is well to remember that, instead of trying to learn what these animals know, we use all our energy in trying to teach them what we know. The natural question is, where does sound end and speech begin? Who is prepared to draw the line? I venture to assert that the differences are a mere matter of degree. In the face of our ignorance upon this subject and the small amount of attention that has been paid to it, it is well to be very circumspect.

That organs anatomical, such as the vocal organs of men and apes, should be functionally different is, to my mind, most improbable. The action of our vocal apparatus is dependent upon our organ of breathing, and the manipulation of respiration is partially dependent upon the position of the body. The development of our particular mode of speech may be corelative of the erect position so characteristic of man.

The development of language is merely one phase of the much larger question of the mental distinctions between man and the rest of the animal world, and I venture to assert that the law of the survival of the fittest is an abundant explanation of mental evolution. Do not let us allow any dust to be thrown in our eyes. This question does not involve the mental condition of highly civilized human beings; it is merely a question of the mental differences between the highest animals, below man, and the least civilized human beings.

Everybody knows that the lowest animals are not destitute of intelligence. In Darwin's Descent of Man, are to be found many well-authenticated facts showing that the same emotions and characteristics, such as curiosity, imitation, memory, attention and even reason, are observed in some animals, beside man. The love of a dog for his owner is proverbial; maternal affection is strikingly developed in many beasts. Monkeys are successful as performers, in consequence of their powers of attention and imitation. Ants unquestionably possess memory; and if dogs and cats do not dream, my observation must be very much at fault. Darwin has recounted some extraordinary cases of the reasoning of retriever dogs; and my experience convinces me that the dogma that man is the only reasoner cannot be supported by any scientific evidence.

There is but one way in which all these facts can be interpreted—viz: by concluding that in all the so-called "higher" mental attributes the true difference between man and the lower animals is, to quote from the prince of observers, Sir John Lubbock, "one of degree and not of kind."

Darwin's explanation of the psychological side of evolution essentially consists of the application of his principle of natural selection. Let me remark that, prior to his time, psychology was a mere mass of verbosity and metaphysical pendantry; it was not a science at all, and *apart from physiology* it is not now, and never can be a science. Darwin's discussion of instinct in the Origin of Species, and the light he was able to throw upon obscure cases by the aid of natural selection, formed a suitable commencement to true psychological science. In the Descent of Man, he deals with the mental characteristics of man and of other animals in a masterly manner. Congenital mental variation favorable to its possessor is very often transmitted to the next generation; and the continued survival of the fittest from a mental point of view must cause a gradual development of the mental faculties. All you need to do is to satisfy yourself that the process of natural selection is the truth, and then the solution of the problem is simple. The origin of language, and of all the higher faculties, including reason, is the result of congenital mental variation, the survival of those best suited to the environment, and the transmission of such congenital characteristics as are of benefit to the individual in the struggle for life. "I cannot doubt," writes Darwin, "that language owes its origin to the imitation and modification of various natural sounds, the voices of the animals and man's own instinctive cries, aided by signs and gestures."

In concluding this very brief sketch, I wish to give Darwin's answer to those who are shocked at the idea of