

The simian tongue. [Pt. II].

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and special students stand upon a different footing. It is to be added that the Museum can do much more to attract the former class than the latter; the visits of the student depending to a much greater extent on causes extraneous to Museum management, and the chief duty of the institution in his regard being to aid him to render them profitable. It is the general public that must be sought in the highways and the hedges. The question still has to be considered whether this is worth doing. Many men of culture would willingly keep museums and picture galleries for the sole use of those who, in their view, are alone likely to turn them to good account. To this we have two answers: that no class has a right to tell another that it is too ignorant or too stupid to benefit by an exhibition; and that, practically, the days are past when public property could be monopolised by a single order of society. If the cultured classes would preserve their own enjoyment of such things their best course is to interest as large a proportion of the community in them as possible. The intelligent and truly educational use of such collections, however, depends far less upon the collectors than upon a variety of causes entirely uncontrollable by them, and in many instances apparently very remote. Any political or social changes, for example, that should limit wealth or absorb leisure, would affect the Museum injuriously; any change in the system of classical instruction that should awaken a living instead of a grammatical interest in classical literature, would have a most favourable effect. "To the minnow," says Carlyle, "every cranny and pebble, and quality and accident, of its little native brook may have become familiar; but does the minnow understand the ocean tides and periodic currents, the trade winds, and monsoons, and moon's eclipses; by all which the condition of its little creek is regulated, and may from time to time be quite overset and reversed? Such a minnow is man"—and, in its relation to the causes which transform society from age to age, such a minnow is the great British Museum.

R. GARNETT.



THE SIMIAN TONGUE.

II.

THE world of science has received with so much kind and candid interest the brief account of my attempts to unlock the portals of speech which lead us from the realm of human thought into the secret precincts of Simian emotions, that I feel it a duty to comply with the urgent wish of so many, and give the anxious friends of progress some conclusions deduced from recent experiments in my novel field of research. I proceed, however, on a line which takes for granted that my reader has read my former article on this same subject.

Later experiments have somewhat modified the details of my theory, but as a whole have added much strength to my belief in the certainty of my cause.

Since writing the sounds used by the capuchin monkeys, as well as I could represent them by the letters of our alphabet, I have had no reason to alter the literal formula by which they are expressed ; but I have found that the word which I had construed to mean *food*, and sometimes perhaps to mean *drink*, has a still wider sense. It is difficult to formulate, in human speech, anything equivalent to it, since our human mode of speech has been so changed by accretions and by our higher modes of thought that we cannot grasp the thought from such a slight suggestion, and our habits of redundancy make us incapable of their modes of speech. It impresses me that the sound formerly described as meaning food is used in some way as a kind of "shibboleth." It is possible that this may arise from the Simian idea of food as the chief source of all happiness, and that the satisfaction which it gives

is the supreme thought of his life, and in this manner he associates that sound with every kindness and pacific office ; but from a lack of opportunities I have not been able to ascertain to what extent these are associated ideas with him.

I have described in my former paper the fright which I gave to a monkey named Jokes, in Charleston, and at the time of writing that article I had not been able to renew friendly relations with him. After a lapse of some ten or twelve days from the time I had frightened him, I resorted to harsher means of bringing him to terms : I began to threaten him with a rod. At first he would resent it, but when he failed to frighten me by his threats and assaults, he soon yielded and came down from the perch in his cage, although greatly frightened. He would place the side of his head on the floor, put out his tongue, and utter a very plaintive sound, having a slight interrogative inflection. At first this novel demeanour quite defied interpretation ; but during the same period I was visiting a young monkey of the same kind called Jack : we were quite good friends for comparative strangers, and he allowed me many liberties with him, which the family to whom he belonged assured me he denied to others. On one of my frequent visits he displayed his temper and made an attack upon me because I refused to let go a saucer from which I was feeding him some milk. I jerked him up by the chain and slapped him sharply for this, whereupon he instantly laid the side of his head on the floor, put out his tongue, and made just such a sound as Jokes had made several times before, under the stress of great fear. It occurred to me that must be a sign of surrender or submission. And many subsequent tests have confirmed this opinion.

But my daily visits to Jokes had not won him back after a lapse of more than two months, and on my approach he would manifest great fear and go through with this strange act of humiliation. I observed that he had a great dislike for a certain negro boy on the place, who teased and vexed him very much, so I had the boy come up near the cage, and Jokes would fairly rave with anger. So great was his dislike for this boy that he seemed to forget all other things about him in his efforts to get to him. I would feign to beat the boy with a stick, and this gave Jokes great delight. I would hold

the boy so near the cage as to allow the monkey to scratch and claw his clothes, and this would fill his whole Simian soul with joy. I would then release the boy and drive him away with sticks and wads of paper, to the evident pleasure of the monkey. I repeated these things many times, and we became the very best of friends again. After each encounter he would come up to the bars, touch my hand with his tongue, chatter and play with my fingers, and show all signs of friendship. He always warns me of the approach of anyone, and his conduct towards them is very largely controlled by my own. He never fails to greet me with the sound described in my former paper. The sound is a compound, as I have shown by reversing the cylinder of the graphophone, and repeating it backward. This will be referred to farther on.

I may here relate that on one occasion a boy was teasing Jokes with a stick, when I approached the cage and put my hand in, and allowed him to caress it; in the meanwhile the boy would reach his hand into the cage under my arm and catch Jokes' tail or toe, which seemed at first to surprise him greatly, but in a trice he detected the author and flew at him with great violence, and every time the boy would reach his hand into or towards the cage the monkey would spring at him and try to catch his hand. In his haste and anger he once grabbed my hand in mistake; but he discovered it so quickly that I had scarcely realised the situation myself before I found him crouched down and his head on the floor, his tongue out, uttering that peculiar sound (which I cannot reduce to letters), in the most suppliant manner, and he continued to do so until he had been assured of peace. When he assaults anyone else he always returns to me and touches my hand with his tongue, which seems to be a kind of sign of a covenant.

Another little monkey of this species which I visited a few times was called Jennie. Her master had warned me in advance that she was not kindly disposed to strangers and I should watch her, that she might not do me any harm. At my request he had her chained in a small side yard and forbade any of the family entering it. I approached her little ladyship with the usual salutation, which she seemed to recognise at once, and I sat down by her and began to feed her from my hands. She seemed to regard me as a friend,

but of a different species. She eyed me with evident interest and some suspicion, but when I would utter that sound for *food* she would respond promptly. While we were indulging in a kind of mutual investigation of affairs a negro girl, who lived with the family and frequently fed Jennie, being overcome by her curiosity, came into the yard and came up within a few feet of us. I at once decided that I would offer her as a sacrifice on the altar of science, so I arose and placed her between myself and the monkey and began to sound the "alarm" or "menace" with great vigour. Jennie flew into a perfect fit of fright. I continued to sound it, and at the same time to attack the girl with a great display of violence, thus causing the monkey to believe that the girl had made the alarm. I then drove the girl away from the yard with a great flourish of paper wads and pea-nut shells, and returned to the little monkey to pacify her. She became quite calm and seemed to think I was her hero, but for days she would not allow the girl to feed or approach her. This quite confirmed my opinion as to the meaning of this peculiar piercing sound.

A few weeks later I went to Cincinnati to visit my chimpanzee friends again, and I found immediately that they gave evidence of understanding one of the words which I used on approaching them. This word I had learned from the record of their speech which I had made last year. I have not had the opportunities to experiment with them which would justify my giving a very full account of any of their traits of speech, only to say this, that I am quite sure from my studies of their vocal character in the graphophone, and by listening to them in their cage, if I could be more intimately associated with them I could soon master their language; but they are kept in a large cage, entirely enclosed in a house of glass, the outer doors of which are kept closed to avoid any change of temperature which might tell on their health, and the keeper is so apprehensive of some ill befalling them that he keeps them for ever under his eye. I succeeded in getting their attention as I tried to utter a sound of theirs, and I could get the female to come to me every time I would use it. I cannot fully describe it here, although it comes within the compass of human speech, and is not very difficult to utter. It is not quite, but nearly, represented by *h-ou-wh*,

very slightly nasal, and, so far, the only trace of a nasal intonation in the vocal products of any of the lower animals which I have ever detected. They have more words than a capuchin monkey, and all the words they speak, so far as I have ever been able to hear, can be reproduced by human vocal organs. My recent visit to them has quite satisfied me that I can make myself understood by them; and while it is premature as yet to mention it, I am now trying to arrange for a trip to interior Africa to visit the *trogodytes* in their native wilds, and if my plans (which are all practicable) can be arranged, I agree to give to the world a revelation which will rattle the dry bones of philology in a wholly new light. Mr. Edison has kindly agreed, if I can make certain arrangements, that he will aid me in the phonograph feature—the only thing which makes these studies possible—and I promise to perform some feats which will be worthy of public attention.

A short time since I made a phonograph record of the great Anubis baboon in the Philadelphia garden. I did not expect to find in him a highly developed language, but my purpose was to compare it with other Simian sounds, to see if I could not establish a series of steps in the quality of vocal sounds which would coincide with other certain characters, and determine whether there was not some unit of linguistic measure by which we might arrive at some standard in any given type. In other words, to see if the vocal powers were in homology in their development with other characters; and I am gratified to find by a series of comparisons that, in my opinion, each cranial model has a certain vocal type which is as much a conformation as are the cerebral hemispheres; that the vocal powers are measured by the gnathic index; that mind and voice are commensurate; and that as the craniofacial angle widens the voice loses in quality and flexibility. I find in man the highest type of vocalisation, and just as we descend in the cranial scale the vocal type degrades into sounds less flexible, less musical, and less capable. These facts apply only in mammals; in birds, insects, &c., there may be quite a different standard of development.

Unlike human speech, the Simian idea is expressed in a single word of one sound, or syllable. For example, the one sound de-

scribed before, which sounds like *wh-oo-w* as nearly as I can put it into letters, not only means *food*, but anything which is connected with food, all the inflections of the noun *food*, all inflection of the verb *to eat*, the adjective *hungry*, the noun *hunger*, the results obtained from the act, &c., such as to express satisfaction, that it is good, and so on. These ideas are expressed in one radical sound, or root. Sometimes a monkey repeats this one sound as rapidly as to cause the casual observer to mistake them for a series of words. This is easily detected in the phonograph, because we can repeat the sounds at our pleasure and compare any two parts of the record.

I have found it necessary to coin a new word to describe the character of their speech, and as each idea seems to be couched in a single word of one syllable and nearly, indeed, of one letter, I have called it a *monophone*, which is suggestive of its peculiar character. I have experimented with a few green monkeys, but not with very startling results, and it is one of the most trying things in life to get a monkey to talk into a phonograph. He will talk as much as a country squire until you want him to put himself to record in the phonograph, and then he grows as dumb as a milestone, and looks as if he was under penance for having lived.

I have tried many novel experiments with the phonograph in analysing sounds, and they have caused me to halt before I can accept some of the dogmas of philology. I find by reversing the cylinder on the graphophone that sounds are perfectly analysed. I find that the sound *oo*, as in shoot, is the dominant phonic in the speech of both man and ape. I find consonants are generally elided or converted into some other form, and pure vocals, as they are called, are converted into words of three syllables, all of which will be described in the near future.

My desire to induce other workers to enter the field which I have only just discovered, and aid in the task which I have just begun, induces me to state my conclusions in a brief form, that each one of itself may furnish a text, as it were, for the critic and student.

I very naturally expect this subject to elicit the unkind comments of the unlearned, and be derided by many who think they

know things that they really do not know. But I trust that men of ability and of integrity will not disdain it as unworthy of their time.

The following will express in a crude way my conclusions :—

1. The Simian words are ambiguous *monotones*.
2. Speech is materialised thought, and thoughts are factors of consciousness.
3. Signs were the first form of speech, and sounds are evolved from them.
4. All animals are capable of expressing as much as they can think.
5. All mammals are capable of emotions, and all emotions capable of expression.
6. All voluntary sounds are the products of thought, and if they convey a meaning to another they perform the functions of human speech.
7. Consciousness is the differentiation of thoughts, thoughts formulate mental words, and they develop into sounds as exponents.
8. Voluntary sounds are the manifestation of thought as matter is of force.
9. Vocal power is commensurate with use, and this by the needs of the mind.
10. The vocal unit is commensurate with the unit of methodic cerebration.
11. The arc of vocalisation will subtend the craniofacial angle.
12. Words are the body of which thoughts are the soul.

R. L. GARNER.

(*To be continued.*)