

## IT'S MUCH CLEARER IN THE GREEK

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HOMISTS are more or less accustomed to hear the praises of Aristotle the philosopher, but even among some Thomists Aristotle the biologist could stand a publicity agent. Aristotle the philosopher did not dabble in biology as today's debutante will with stage and screen. There was no dilettantism in his blood. Charles Singer of the University College, London, has written of him: "The surviving works of Aristotle place him as among the very greatest biologists of all time. He set himself to cover all human knowledge and succeeded in this vast task in a way in which no one has succeeded before or since. He was a deeply original thinker, and he had an unrivalled capacity for arranging his own and other people's material. To these qualities he added first-class powers of observation and great shrewdness of judgment. No succeeding thinker has exercised so great an influence."<sup>1</sup> All of which is high praise for a man whom so many regard, if they deign to so much as consider him, with something of the disdain the average garage mechanic feels for the college professor stranded in a broken-down automobile.

Aristotle's thought soared to the heights, but his feet slogged quite loudly in the mud of the reality above which many never rise. Aristotle wrote much about this latter reality, and quite a number of his works have survived and are in rather good condition. Of his biological works, four are major treatises known by their latin names as *De anima*, *Historia animalium*, *De partibus animalium*, and *De generatione animalium*. In all of Aristotle's biological works there run two strains: the first, of observation; the second, of deduction. His theories were based on facts, and his facts were gathered with a purpose. He didn't theorize from a high chair nor did he play with mud pies aimlessly.

Although Aristotle had no high-powered instruments, he made ingenious observations, one of which, ridiculed for centuries, was not recognized as valid until the middle of the last century. Aristotle, in observing the habits of the sheat-fish or cat-fish, noted that the male cat-fish watched over the young for forty or fifty days, while the female, having laid the eggs in shallow water, went away. For centu-

<sup>1</sup> Singer, Chas., *Story of Living Things* (New York, 1931) p. 14.

ries this account was so little regarded as to be considered spurious by many who observed that the male sheat-fish in Europe did not act in a manner harmonious with the statements of Aristotle. Disconcertingly enough for the Aristotelians, the European *Silurus glanis* (Latin trade name for cat-fish in that section) deposits its eggs in a hole, and, after fertilization, leaves them there without further care. Centuries passed with this apparent blot on Aristotle the naturalist continuing to irritate his more sensitive followers. Then in the 1850's, Louis Agassiz of Harvard noticed that the American variety of cat-fish conducted itself precisely as if Aristotle himself were watching it. Agassiz then did a profoundly simple thing. He sent to Greece for a cat-fish. This variety turned out to be different from both European and American sheat-fish and behaved in very proper Aristotelian fashion. Agassiz later made a nice gesture to the maligned old Greek and named the newly re-discovered cat-fish *Parasilurus Aristotelis*. Oddly enough, this discovery of Agassiz was over-looked until about thirty years ago. Singer in his *Story of Living Things* says much to the point: "That we are, even now, without information more modern than Aristotle as to the breeding habits of this creature gives some indication of the value of his work."<sup>2</sup>

There was another occasion when Aristotle looked and others laughed. In his description of the generation of a certain type of *Selachia*, Aristotle seemed to list some rather extraordinary details. As in the previous case, naturalists ignored Aristotle's contribution to the story of the *Selachia*, and perhaps they doubted the very authenticity of the work itself. Johannes Muller in the last century silenced their expressions of disbelief when he proved the old Greek had the right words for it.

Anyone even glancing through the *Historia animalium* is amazed to see that the Stagirite covered everything from measles in pigs to Pontic mice. The extent and depth of his research would thrill a "country doctor" beset by the specialism of today. The Aristotle who has remained a marvel in the philosophic world for the accuracy and intensity of his speculative thought seems to have rested from his arduous mental labours by vigorously careful experiment and tirelessly patient observation of the things of nature. He must have spent hours in uncomfortable positions to gain some of his information. Who knows, too, the chances he took obtaining his data on such wild animals as the wolf and bear?

To the Americans who so admire the "self-made" and the "first"

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<sup>2</sup> Singer, Chas., *op. cit.*, p. 20.

in every line, Aristotle should have an especial appeal. He seems to have been a "go-getting" contemplative. There were no great universities to lend him magnificent apparatus for his experiments. There was no understanding "Mr. Chips" to pat him on the back with a "Go to it, my boy. You're on the right track." There was little use seeking knowledge from those who may have accompanied him. His associates were learners, not learned. Aristotle drove the covered wagon of research into the frontiers of biology. Hindered on almost every side, he still pointed the way to scientific green pastures. He was handicapped by the lack of even a scientific nomenclature, which did not begin until the time of Theophrastus, one of his disciples. But although he is not responsible for technical names, for which the embryo scientists will bear him no rancor, yet he seems to have been the first to cater to the "tabloid" mind. He apparently was the prime user of diagrams and illustrations, for which any scientist, novice or tottering, will give him thanks. Although his diagrams have not come down to us, he often described so fully and clearly as to enable his readers to reconstruct the lost chart.

Aristotle's *Historia animalium* still is interesting to read even for a layman with only popular knowledge of the subject. Some parts are quite quaint as in the section where he mentions endive-juice as the choice fruit of dragons.<sup>3</sup> In another page the writer seems to be inscribing a commentary on a more recent event when he writes concerning multiple births: "The largest number ever brought forth is five, and such an occurrence has been witnessed on several occasions. There was once upon a time a certain woman who had twenty children at four births; each time she had five and most of them grew up."<sup>4</sup>

Singer in treating of Aristotle's inquiry concerning the nature of life writes: "It cannot be said that he ever definitely attained to the "evolutionary" point of view. But it is evident that he was moving in that direction, and perhaps if he had lived another ten years he might have reached it. But, whether we will call him an Evolutionist or whether we deny him that title, it is yet quite easy to read an evolutionary meaning into some of his biological writing. To do so is to develop but not to force his meaning."<sup>5</sup> While André Brémont, S.J., admits: "There is then a sort of ideal continuity in the world of life, even between plants and animals . . . I said "ideal" continuity,

<sup>3</sup> *The Works of Aristotle* (Oxford, 1910), Vol. IV: *Historia animalium*, p. 612 a.

<sup>4</sup> *Historia animalium*, page 584 b.z

<sup>5</sup> Singer, Chas., *op. cit.*, p. 39.

and not real continuity," and he goes on, "There are indeed passages in Aristotle which suggest the ideal of real evolution and transition from one degree of life to a superior degree," yet Father Brémond doesn't think "that Aristotle ever thought of it."<sup>6</sup>

It is on such questions as these that the extent of Aristotle's endeavours is brought more clearly to the foreground. While Rousselot might write: "Aristotle the philosopher did not cease to be Aristotle the naturalist,"<sup>7</sup> Brémond could also say: "He is a philosopher first and foremost, who happens to be of a biological turn of mind." Aristotle did not forget the one field while he worked at the other, so to properly understand his *Historia animalium*, one should be both philosopher and naturalist. To understand thoroughly the parts of his work at which to applaud and the parts at which to have a quiet chuckle, one should be a combination of Garrigou-LaGrange and Mendel, for only such a man can look at nature and philosophy with truly Aristotelian eyes.

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<sup>6</sup> Brémond, André, *Philosophy in the Making* (New York, 1939) p. 173.

<sup>7</sup> Rousselot, P., S.J., *Intellectualism of St. Thomas* (New York, 1935,) p. 100.