

ON THE DOMESTIC CATS, *FELIS DOMESTICUS*, AND
MUSTELA FOINA, OF ANCIENT AND MODERN
TIMES. *By* PROFESSOR ROLLESTON, M.D. *Oxford.*

HAVING recently had occasion to study the habits and anatomy of the English Marten Cats, *Mustela Martes* and *Mustela Foina*, and having looked into the history of these animals and of certain other carnivora which have borne the same name as they in ancient and modern times, I have come to think that the latter of the two creatures specified, namely, the white-breasted Marten, *Mustela Foina*, was the animal which the ancient Greeks and Romans employed for the same domestic purposes for which we employ the *Felis Domesticus*: whilst this latter animal has been employed as at present in Western Europe for probably a considerably longer period than the last thousand years. Other writers to whom I have referred, and amongst them notably Dureau de la Malle, have adopted the former of these conclusions; but upon premises more or less inadequate or incorrect, or both. I am well assured that this question has for the philosophic naturalist much more than a merely archæological interest, for in the resolving of it we may have light cast upon the working of the principle which Mr Darwin has shewn to be more potent than any other in regulating the distribution of species, and which Van Beneden, with the well-known physiological¹ aphorisms of Wolff and Treviranus before his eyes, has formulated in the words², “les êtres qui composent une Faune sont solidaires entre eux comme les organes d’un être vivant.” It is true that no such close interdependence as exists between man and certain other of the domesticated animals, even to the extent of the interchange of disease and death by the intermediation of cysti cerci and echinococci, has been shewn to obtain between him and any of the animals of which I shall here have to write; but readers of the “Origin of Species” will recollect that more intricate, if less

¹ Paget's *Surgical Pathology*, p. 17, ed. Prof. Turner. Lewes, *Physiology of Common Life*, i. p. 286. Wolff, *Theoria Generationis*, p. 108, § 236.

² *Recherches sur les Faune Littorale de Belgique*. Cétacés, p. 4.

mournful, networks, may bind up the presence in a particular country of a domestic animal with something so apparently distant from its sphere of operation as the general colouration of the landscape. Col. Newman¹ shewed how the number of humble bees in a district depended on the presence of man, whose domestic cats kept down the numbers of the honey-loving and devouring field-mice; and Mr Darwin demonstrated in the way of experiment, that the presence of the humble bee was a prerequisite for the fertilization of the heart's-ease and red clover. The dependence of animal life upon the presence of particular forms of vegetable life is familiar enough to us; our own comfort depends too directly in these over-peopled days and countries upon the adequate abundance of our flocks and herds, and that adequate abundance again depends too directly upon that of the turnip crops, unknown to our forefathers, to suffer us to forget it; but it is none the less true that the peculiar character of the vegetation, and consequently of the landscape of a country, depends very frequently upon the peculiar characters of its animal inhabitants. The antelopes², by carrying and dispersing the seeds of grasses, change the characters of the African Desert; and the red glow of the clover field which gratifies the eyes of the artisan depends ultimately on pollen-carrying insects, and at second hand from them upon the cats which spend their daylight hours in the same murky atmosphere that he does. It is possible that some such secret bond may exist between the widely spread family of the *Mustelidæ*³, and that of the *Abietinæ*, the geographical range of which so nearly coincides with theirs. In this country the geographical distribution of the firs is now all but exclusively dependent upon man's artificial aid; where it does take place independently of him, it takes place in great measure by the aid of the squirrel which carries off the cones or seeds, and, having buried them, forgets, or is unable to dig them up again. It is not likely that any direct alliance subsists between any musteline and any rodent, but the more arboreal and egg-loving muste-

¹ *Origin of Species*, p. 84, 4th Ed.

² Livingstone's *Travels and Researches in South Africa*, 1857, p. 99.

³ A. Wagner, *Abhand. Akad. Wiss. München*. Bd. iv. p. 26 and 107, 1846.

lines such as the martens, may by robbing the nests of the rapacious birds such as the carrion crows, the great enemies of the squirrels, indirectly but most efficiently favour the spread of these latter creatures. But the subject of the interdependence of the two kingdoms of animal and vegetable life is a much larger one than the one I propose to deal with here; and I have but introduced the mention of it to shew what broad and distant views may be gained by attentive gazing through what may seem to be but narrow casements. I shall arrange what I have to say under two heads. I shall first attempt to prove that though the ancient Greeks and Romans had not domesticated the cat, *Felis Domesticus*, in classical times, this animal was nevertheless domesticated in Western Europe at an earlier period than is commonly assigned. And secondly, I shall address myself to shewing that the white-breasted Marten, *Mustela Foina*, which is known also as the "Beech Marten" or "Stone Marten," was functionally the "Cat" of the ancients. A list of the different works and memoirs which I have consulted or read upon the topics I have written upon will be found appended to this article. Either my conclusions or my premises, or both, will be found by any one who will verify the references I have given to differ more or less from those of most or all the writers I have quoted, in all or most of the points which we treat of in common; but I have abstained from the invidious task of specifying in detail the various errors small and great into which I think my predecessors, great and small, have, Sir G. C. Lewis not excepted, fallen.

A few words may be employed at the outset in elucidating one of the ¹few universally or all but universally conceded points in this history, and shewing that the classical writers knew nothing of any domesticated *Felis* in their own countries, and that Mr George Scharf² has consequently fallen into an anachronism in introducing a figure of our cat into his vignette in illustration of the telling of Lord Macaulay's tale of the

¹ Link, *Die Urwelt und das Alterthum*, pp. 199—201, Berlin, 1821. Klemm, *Culturgeschichte*, i. 1, quoting Link. Isidore Geoffroy St Hilaire, *Hist. Nat. Gen.* Tom. iii. 96.

² *Lays of Ancient Rome*, p. 78, 1860.

Battle of the Regillus. In Egypt the cat was domesticated from an early period, as we know from Herodotus and also from the book of Baruch¹; and Cuvier² could not discover any specific difference between the mummied remains of the domesticated *Felis* of those days and the similar structures in our own tame cats. Varro (fl. B.C. 28), and Columella (fl. A.D. 20), both speak of the *Felis* as Oppian (fl. A.D. 190) does of the *αἴλουροι κακοεργοί* as animals to be kept out of poultry-pens, but none of these writers speak of the animal as being domesticated; and Cicero when he speaks, or hints, *more suo*, that he would speak but for a reluctance to be tedious, *de felium utilitate*, speaks in the same connexion of the ichneumon and the crocodile, and shews us thereby that he had Egypt and not Italy in his eye. The two lines in the *Batrachomyomachia*, 51—52,

πλείστον δὴ γαλήνῃ περιδείδια ἦτις ἀρίστη
ἢ καὶ τρωγλοδύοντα κατὰ τρώγλην ἐρεεῖνει,

do not seem to compel us to translate *γαλήνῃ* by *felem*, as *κατὰ τρώγλην* may very well mean “*along and throughout my hole*,” and indeed the line

ἐχθίστη γαλήῃ τρώγλης ἔκτοσθεν ἐλοῦσα

may seem to shew that the catching *outside* was a rare occurrence, and the inside or musteline method the commoner³.

Neither do I think that certain others of my predecessors have been more correct in translating the words in the fifteenth *Idyll* of Theocritus, the *Adoniazusæ*, line 28,

αἱ γαλαί μαλακῶς χρῆσθοντι καθεύδεν,

¹ *Epistle of Jeremy, Book of Baruch* (Apocrypha), chap. vi. verse 22.

² *Annales du Muséum*, An. xi. (1802), p. 234. *Ossemens Fossiles. Discours Préliminaire*, pp. lxii—lxiii. ed. 1821.

³ It must be recollected however that though a carnivore's body will always pass tolerably easily through a foramen which will allow of the passage of its head, the *μῦες* of the *Batrachomyomachia* were not *rats*, Parliamentary institutions not having been introduced into the kingdom of Artemisia, where and when it is supposed to have been composed, and that as the thirty-first of Babrius' *Fables*, or indeed measurement with a pair of compasses of even our smallest weasel's interzygomatic diameter, will shew, many a mouse-hole will admit a *mouse* which will not let his enemy in after him. But the *γαλή* was essentially troglodytic, though some holes were too small for it, else my argument would fall to the ground, and Sannyrion would not have written

τί ὄν γενόμενος εἰς ὀπήν ἐνδύσομαι;
φέρ' εἰ γενόμεν γαλή;

as though the domestic cat was alluded to by Praxinoe. For though our proverb speaks of the catching of a weasel asleep as a matter of some difficulty, anybody who has watched the way in which one of the larger mustelines when tame or at least in captivity composes itself to sleep, and the very evident reluctance with which it unrolls itself, when awaked, out of the dog-like convolution into which it has curled itself up, will feel the force of the more correct rendering. Some of the Alexandrians, again, who were contemporary with Theocritus, used the same word for the tame cats, with which they were more familiar than he, a mere occasional visitor in Egypt, could have been, that Herodotus uses. Callimachus, in his *Hymn to Ceres*, has, line 111,

καὶ τὰν αἰλουρον τὰν ἔτρεμε θηρία μικρά,

where the Scholiast *in loco* gives κάττος as the synonym.

On the other hand the compiler of the collection of foolish stories (which is ascribed falsely to Aristotle, and called the "De Mirabilibus Auscultationibus"), who is supposed to have lived about the same time as Callimachus and Theocritus, speaks, as does Ælian after him, *N. A.* 15. 26, section 28, of a kind of Cyrenian mouse as being πλατυπρόσωπος ὥσπερ αἱ γαλαῖ; and it is difficult to think that γαλαῖ is not intended to stand in this passage for *Felis*. Section 28 however may have been introduced into this treatise in later times, or possibly the words ὥσπερ αἱ γαλαῖ may by themselves have found their way there as a gloss from the pen of some wise Byzantine to whom in a later age, when the γαλή of the classic times had resigned both office and name to the αἰλουρος from Egypt, *curæ fuit ejusmodi quisquiliis conscribere*. The *Batrachomyomachia*, it should be observed, is quite free from any taint of Alexandrian or Byzantine impurity, and the use of the word γαλή by writers from these localities does not bear therefore upon its employment in the verses above quoted from it. But though there is no reason for supposing that the *Felis domesticus* was domesticated in any other country than Egypt before the Christian era, there are many reasons for demurring to the statement ordinarily¹ made

¹ For example, *Conversations Lexicon*, Bd. VIII. p. 735. Bahr, Hdt. II. 66.

to the effect that this animal was first spread throughout Europe at the end of the period of the Crusades.

On looking into Ducange's Glossarium, under the words "Catta," and "Cattinæ Pelles," I find that Cæsarius, who was the physician-brother of Gregory, the Theologian of Nazianzus, and who died A.D. 369, having been the friend of the second Constantine and Constantius, speaks of *ἐνδρῦμοι κάτται*; and I presume that the use of this expression shews with some degree of probability that tame cats were in use by this time in Constantinople. The date of Palladius is somewhat uncertain, though supposed with a good deal of probability to have been about the same as that of Cæsarius, but as his local habitation appears to have been Italy, his words, IV. 9. 4, "Contra talpas prodest catos frequenter habere in mediis carduetis, mustelas habent plerique mansuetas," are of importance. They shew that the two kinds of cat were both in use as domesticated animals side by side and at the same time, in Italy, nine hundred years before the first of the Crusaders reached Constantinople, and in the days of Gratian and Theodosius, not in those of Godfrey and Tancred. From the same authority, Ducange, I find that Evagrius (fl. 536) many years later, indeed almost a couple of centuries after the date ordinarily assigned to Palladius, still recognizes *αἴλουρος* as the more correct denomination for the *Felis domesticus*, saying, as though the word *κάττα* were a somewhat trivial and over-familiar designation, *αἴλουρον ἢ κάτταν ἢ συνήθεια λέγει*, lib. VI. 24. The word "bird" stood once, I believe, in much the same relation to the word "fowl;" and the householders of this country shew often a greater precision and correctness, more *prisca fides* in short, in this matter of the use of these two words than the Upper Ten Thousand do.

I have had a reference given me to a work of the period of Eustathius, i. e. about 1100 A.D. viz. the *Γαλεωμνομαχία* of Theodorus Prodromus, in which the word *γαλῆ* may be found¹ and proved to be used for the cat as we understand the word. I have not however been able to discover or borrow

¹ The following are a few lines from this work, taken from an edition printed at Basle, 1518, by Frobenius, without numbering to the lines. They are, I think, conclusive:

any reference to the employment of the word *γαλῆ* in the sense of *Felis* or in any other in the writings of any author who flourished, if authors did flourish, in the six hundred years which rolled so drearily away between the days of Evagrius and those of the author of this tragi-comedy. The word *mustela* seems, I may say in leaving this part of my subject, nearly always if not quite, to stand for a weasel of one kind or another; though Phædrus does once, namely iv. 1. 9, use the word in a passage homologous with one of those in which we find *αἰλουρος* used in the fables ascribed to Æsop. This latter word, on the other hand, seems always to stand for a *Felis domesticus* or *catus*; whilst *Felis* in the Latin writers does seem, according to Facciolati, to be used indifferently, or nearly so, for either Feline or Musteline.

The argument to shew that our white-breasted Marten, *Mustela Foinea*, was used for the same domestic purposes by the ancients as the *Felis domesticus* is by ourselves, may be briefly stated thus. An animal called *γαλῆ* by Aristotle (*Hist. Anim.* II. 3. 5, VI. 30. 2, VIII. 27. 2, IX. 2. 9, ib. 7. 4), and repeatedly referred to by Aristophanes¹ and other Greek writers of the

A. τίς ἐστιν αὕτη; μὴ φθονήσης τοῦ λέγειν.

B. ἦν γαλέην ὠνόμαζεν ἀνθρώπων γένος,
αὕτη γὰρ αἰεὶ χηραμὸν περιβλέπει
καὶ μῦς ἐρευνᾷ.

ἡμᾶς δι᾽ ἄχρῃ λυγρικὸν βλέπουσά τι.
πολλὴν καταγνοὺς τῶν πάλαι πεφυκότων
τὴν ἀσθένειαν καὶ κακίστην δουλείαν
ἀνθ' ὧν περ' εἰσω φωλεῶν μυχαιτάτων
μένοντες οὐκ ἄτολμον εἶχον καρδίαν.
καὶ δὴ κατέειχε τοῖς θυξίω ἀγρίω
καὶ σὺν τάχει βέβρωκε τὸν νεανίαν.

¹ Aristophanes, *Acharn.* 255:

κάκποιήσεται γαλᾶς
σοῦ μηδὲν ἤττον βδέειν.

Plutus, 693: ὑπὸ τοῦ δέουσι βδέουσα δριμύτερον γαλῆς.

Vesp. 363, 4: ὥσπερ με γαλῆν κρέα κλέψασαν
τηροῦσιν ἔχοντ' ὀβελίσκους.

1182: οὕτω ποτ' ἦν μῦς καὶ γαλῆ.

1186: μῦς καὶ γαλᾶς μέλλει λέγειν ἐν ἀνδράσω.

Thesmoph. 558: ὡς τ' αὐτὰ κρέ' ἐξ' Ἀπατουρίων ταῖς μαστροποῖς διδοῦσαι
ἔπειτα τὴν γαλῆν φαμέν.

Eccles. 792: ἡ δι᾽ ἄξειεν γαλῆ.

best ages, as well as by the Scholiasts¹, under this title and in more or less completely proverbial expressions, is spoken of as destroying mice, snakes, lizards, birds and birds' eggs, as being the reverse of odoriferous, as being addicted to stealing, and also being so common an animal as to be, like our cats, a convenient scapegoat for the blame due to the thefts of other and not quadrupedal animals, and finally, as being like in its colour and its pelage, except that this latter is a little less thick, and its general appearance and its moral characteristics to the animal called in antithesis to it *γαλῆ ἀγρία*, but ordinarily *ἴκτις*, which is a little larger, which loves honey, which kills birds, and is very susceptible of being tamed. It is impossible to think that any great mistake can attach to the interpretation of statements so consentient, so numerous, and relating so eminently to matters of every-day life and constantly observable occurrence. We have two sets of resemblances and differences detailed to us as existing between two animals, the *γαλῆ* and the *γαλῆ ἀγρία* or *ἴκτις*; these two sets of resemblances and differences are just those which exist between our white-breasted marten and our yellow-breasted marten, and as I believe it is impossible to find a second pair of animals to which this comparison will apply, I apprehend that the point is proved. Both the British martens are, as I know from my own observations, and information gathered from persons in the habit of hunting them, great destroyers of mice, birds, and snakes; they are both stated in the ordinary works of natural history to be fond of honey, which the ferret² and the weasel will not touch; the fur of both is valuable, but that of the larger species is the more valuable.

Simonides of Amorgos, fl. B. C. 660. Stobæus, *Florilegia*, Vol. III. ed. Gaisford, p. 63, T. 73. 61:

κλέπτουσα δ' ἔρδει πολλὰ γείτονας κακὰ
 θύματα δ' ἔρα πολλάκις κατεσθίει.

Cf. also *γαλῆ χιτώμιον*, *γαλῆ κροκωτόν*. Babrius 27, *γαλῆ θηρώσα μὲς τε καὶ σαύρας*. Mr Max Müller tells me that in the *Hitopadesa* an animal, called *Nakula*, kills the serpent under the same provocation, and with the same reward as the hound kills the wolf in our story of Llewellyn. It very probably may have been a marten.

¹ Cited by Schneider from Eustathius and elsewhere in his edition of Aristotle's *Hist. An.* iv. p. 48, 49, q. v.

² Buffon, vii. 213. Wagner, *Saugethiere*, i. 500.

The colouration of the Polecat, *Mustela Putorius*, puts it out of the field into which it has so often been wrongfully introduced, as does also the not altogether¹ unimportant fact that it is not certain that it is found in the extreme south of Europe. If any one who has not had, or perhaps does not care to have, proof that the common north-country name for the marten, viz. "Sweet Mart" as opposed to "Foumart" or "Foul Mart," an *alias* which the polecat has earned, may not after all be so distinctive as to make us think that we cannot have in the white-breasted marten the same creature as that alluded to in the first two passages I have quoted from Aristophanes, wishes to have this scruple removed at easy cost, he may consult Gesner (*Hist. Anim.* p. 866), who quotes something, *in loco*, to the purpose, from Alexander Aphrodisiensis. The stoat, *Mustela Herminea*, could not have failed to have had the well-marked club-shaped black tip of its much larger tail mentioned in contradistinction to that of the common Weasel, *Mustela Vulgaris*, if these two animals had been the pair contrasted as γαλή and ἴκτις; and it may further be remarked that the comparatively small bulk of these animals, as also of the Sardinian Weasel, *Mustela Boccamela*, which has also had its claims advocated for the title of γαλή, would have very sufficiently prevented them from being the "fine thieves" which we know from Simonides, Aristophanes, and Babrius, the γαλαί were. In looking over my notes of the anatomy of the last marten, a male, which came into my hands, I find that there was upon its *linea alba* a space of two inches in length almost bare of hair to direct attention to the fact mentioned by Aristotle, *Hist. An.* II. 3. 5, καὶ γὰρ ἡ γαλή ὀστροῦν ἔχει τὸ αἰδοῖον, and to explain how he came to class this comparatively small animal as regards this carnivorous peculiarity with animals so much larger as the fox and the wolf.

I will conclude the question of the Marten Cat with the lines from Nicander, the contemporary of Theocritus, which Schneider gives, *l. c.* IV. p. 49, and I will add to them, what Schneider does not *in extenso*, viz. the commentary of the Scholiast as given in the Editio Princeps of Aldus Manutius,

¹ Blasius, *Saugethiere Deutschlands*, p. 224.

printed 1499, before the art of printing was sixty years old. I give the lines and the Scholium, as both are much to the points just discussed and dismissed, and neither are hackneyed in the literature of the subject. Nicander, *Theriac.* l. 196 :

Μορφή δ' ἰχνεύταο κνωπέτου ολον ἀμυδρῆς
 ἰκτιδος ἢ τ' ἄρρισι κατοικιδίησω δλεθρον
 μαίεται, ἐξ ὕπνοιο καθαρχάσσα πετεύρων.

To these lines are laterally apposed in the cramped contractions of the edition specified, the following words of the Scholiast¹: ἀμυδρῆς δε ἦτοι μικρᾶς ἢ τῆς δεινῆς καὶ ὀργίλου. ἰκτις δὲ ἡ λεγομένη ἀγρία γαλῆ. καὶ "Ὀμηρος κρατὶ δ' ἐπικτιδέην ὡς ἀπὸ τῆς ἰκτιδος τοῦ ζώου.

Thirdly: Strabo's words, III. 386, quoted by Schneider, l. c. III. p. 524, and relating to the taking of rabbits, καὶ δὴ καὶ γαλαῶς ἀγρίας ἃς ἡ Λιβύη τρέφει, φέρουσιν ἐπίτηδες, ἃς φιμώσαντες παριᾶσιν εἰς τὰς ὄπας. αἱ δ' ἐξέλκουσιν ἔξω τοῖς ὄνυξιν, prove, I suppose, beyond a question, that γαλῆ stood for Ferret, *Mustela Furo*, as well for the Martens, as early as the Christian era.

Fourthly: As one kind of γαλῆ was known as the *Ταρτησσία γαλῆ*, and as the Scholiasts tell us² *Ταρτησσίαν* was used ἀντὶ τοῦ μεγάλλην, and as Herodotus informs us, IV. 192, that γαλαῖ very like these Tartessian (or larger) γαλαῖ, were to be seen in Libya, where we know any animal like and larger than a marten would be a viverra, I think we may with some little probability suppose that the *Ταρτησσία γαλῆ* was nothing less or else

¹ I hope I shall not be considered presumptuous for saying that having seen the Pine Marten or Yellow-breasted Marten escape "like a shadow," as Longfellow describes the hare as doing, from the midst of an assemblage of men and dogs of all dimensions when smoked out from under some rocks, I believe I have a better idea of what Nicander, who may have been similarly privileged, meant by ἀμυδρῆς than the Scholiast had. Good as was the creature's need, its agility was more than commensurate with it; and whilst the words *abiit, excessit, evasit*, and, alas, for the interests of anatomical investigation, *effugit* also, are but weak symbols to express its speed, it takes a whole hexameter-ful of imagery to give the picturesque effect which its lithe abstraction of itself from jaws and paws produced upon me. It fled

Par levibus ventis volucrique simillima somno.

² See Aristoph. *Rana*, ed. Bothe, adnot. ad l. 440, sub vocc. *Ταρτησσία μύρανα*, ibique citata.

than the *Viverra Genetta*, which is found all over Africa and also in the South of Spain and France, where it is domesticated even now, here and there, and acts as a tolerable cat. I have not been able to find that this animal is known in Greece, it is not included by Blasius in his *Saugethiere Mittel-Europas*; whence we can the better understand why it was called *Ταρτησσία γαλή*; though it is found in Asia Minor, whither it may have found¹ its way by way of Egypt. If the *Herpestes Widdringtoni*, recently² found in the Sierra Morena, had been as well known in the region of Tartessus as the *Viverra Genetta*, its claims to be considered as the *Ταρτησσία γαλή* would perhaps have been as much greater as its size is. But the Pharaoh's Rat, which would then have been the *γαλή* of Herodotus as being the representative of the Spanish *Herpestes*, would have been contrasted with it in the point of being considerably smaller, which however is not the case. I append measurements of these and of certain other of the animals of which I have spoken in this paper, the point of size being the point in which the Tartessian or Spanish Marten is contrasted with the commoner one by the Scholiast, and being, as it seems to me, sufficiently great to mark the difference which the lateral and the caudal striping of the Genet also constitutes between it and the *γαλαῖ* of Greece.

	Lgth. body.	Lgth. tail.
Common Genet, <i>Viverra Genetta</i>	20"	16"
Pharaoh's Rat, <i>Herpestes Ichneumon</i>	18"	18"
Spanish Ichneumon, <i>Herpestes Widdringtoni</i> ...	22"	20"
White-breasted Marten, <i>Mustela Foina</i>	16"	8"
Yellow-breasted Marten, <i>Mustela Martes</i>	18"	12"
Polecat and Ferret, <i>Mustelæ Putorius et Furo</i> ...	18"	6"
Sardinian Weasel, <i>Mustela Boccamela</i>	8½"	4"
Stoat, <i>Mustela Erminea</i>	10"	4"
Common Weasel, <i>Mustela Vulgaris</i>	7½"	2"

The upshot of this paper then is to shew that in classical times the word *γαλή* was used by the Greeks to denote the

¹ Ainsworth cit. A. Wagner, *Munich Abhand. Akad. Wiss.* iv. 107.

² Gray, *Ann. and Mag. Nat. Hist.* 1842, ix. 50.

Musteline Martes and Ferret, but not the Polecat probably, though probably the Genet; and that in later times, but not till later times, it was used also for the *Felis Domesticus*. The word *mustela* does not seem to have been transferred together with the office when the latter was handed over from the Marten to the Felis, in Italy. In the East the Felis took both the name and the work of the rival it supplanted. It did succeed in supplanting the Marten as the domestic mouse-killer, probably partly by virtue of its greater attachment to man and to place, partly by virtue of its less pronounced tendency to burglary and petty larceny, partly by virtue of its more even temper, and partly by its greater cleanliness and less offensiveness. The very points, also, in which as a wild animal it is inferior, make it superior as a domestic one to a musteline. Its constitution being less plastic it cannot fit itself as easily as they can to varying climates, and in many, as Rengger has shewn of Paraguay, it cannot run wild. Its range of foods is more limited, and its faculty for, and its courage in adopting new methods of purveying for itself, less conspicuous than theirs. Hence "the poor cat of the adage" being more dependent on man, has been obliged to render itself more useful to him than the Marten, and it has very successfully turned its inferiority to "commodity."

The question as to how, in the trivial language of two different nations, English and Greek, in modern as in ancient times, Viverrines¹, Mustelines, and Felines, have each had a representative called by the same name as a couple of animals, one in each of the two other families, is a little harder to understand for the anatomist or for the anatomical artist, than it is for anybody who, being devoid of either of these accomplishments, will stand inside the half-shed half-house for the "Small Carnivora" at the Zoological Gardens, and listen there to the remarks of people who overlook the little differences upon which scientific zoology is founded. "They are all cats," I heard one of these authorities² say there one

¹ We speak of a Civet Cat as well as of a Marten Cat and common Cat.

² Strabo, however, uses much the same language in speaking of what must, I think, in all probability have been the common Genet, *Viverra Genetta*. Writing

day, albeit there were there then plenty of the eminently annuloid Viverrines as well as a very typical Felis, the *Felis Chaus*, to be compared and contrasted at a single glance and within a few feet of each other. It is not hard to see how the Mustelines and Viverrines come to be classed together, seeing that so many members of both families are so markedly elongate, vermiform, tapering, and low on their limbs. But the relative proportions in the sides in the trapezium which four lines, corresponding one to the forelegs, one to the hind, one to the line of the back and the fourth to the ground on which the creature stands, make up respectively in a Feline and in a Viverrine or Musteline viewed from the side are so very different, to say nothing of the all but equally striking differences in the proportions of the skull and jaw diameters, longitudinal and transverse, *inter se*, firstly, and in relation to the cervical region, secondly, that we must look to points of habit rather than of structural arrangement to account for the imposition of this common name upon creatures to our eyes so different. And I suppose the springy, yet silent lightness of their step when placid, and the lightning-like pounce of their attacking step, correlated as they are with a more or less similar armature in tooth and claw, are the points which "imaginationem ferientia aut intellectum vulgarium notionum nodis astringentia," have caused the imposition of the common name these animals have had given them. The arboreal and nocturnal habits again, correlated with certain modifications in the organs of special sense, are common points to the Feles and the Mustelæ, and especially though not exclusively the martens. Both alike take to trees when pressed by hounds, but since the invention of firearms this single device of the "cats" is no longer worth as in the old fable more than all the tricks of the Fox. The phrase "up a tree," was not, perhaps could not have been anterior to that of "as sure as a gun." The Pine Marten indeed will, Blasius informs us, sit still on the same place

of Mauritania he says, XVII. c. 3, p. 827 A, Casaubon, φέρει δὲ καὶ γαλαῖς αἰλουροῖς ἴσας καὶ ὁμοίας, πλὴν ὅτι τὰ ῥύγχη προπέπτωκε μᾶλλον.

on a bough after having been shot at once and missed. The cat has, Rengger informs us (*Saugethiere Paraguay*, p. 214), learnt to kill the rattle-snake in Paraguay, and I have read that the Felis acquired this selfsame snake-killing dexterity in the island of Naxos, but I have not the reference at hand at this moment. Herein it has by practice under the stimulus of constant provocation come to resemble the Mustelines in what is instinctive to them; but though it will steal cream, as Falstaff told us, it will never, like the martens, steal eggs nor honey nor take to burrows in the way of refuge.

I am aware that there are both scholars and men of science to whom disquisitions such as these will seem but the *strenua inertia hominis male feriat*. Critics such as Pope, and, I regret to have to add, such as Hallam (see *Literature of Modern Europe*, I. 277), speak of such attempts to preserve the unities of time and place in Faunæ as in dramas, the one with the cynical sneering giggle, the other with the elevated and refrigerating yet half-compassionate contempt congenial to their respective schools of literature and of politics. But to the scholar I would say that, though in these matters as in many others by increasing knowledge we increase also sorrow, or at least our susceptibility for annoyance, it is rare indeed to find a writer of the classical periods making the blunders in the way of putting animals into places which they never were found in except in connexion with the circus of olden or the menagerie of modern times, which are so rife in all but our very best modern writers. Modern catalogues of African Mammals shew that Virgil did not deserve the criticism as to the presence of the stag there which Pope in the *Martinus Scriblerus* puts into the mouth of Bentley as unworthy of any one else; and that Lipsius need not have explained away, as he does (*Elect.* II. 4), the phrase *Libystidos ursæ*. The placing of the Lion in Sicily by Theocritus, I. 72,

τῆνον χῶ'κ δρυμοῖο λέων ἀνέκλαυσε θανάτῃα,

is, in fact, the only anachronism or anatopism of the kind which my memory furnishes me with from the writers of the best periods of Greek and Roman literature.

To the man of science I may say in the words of Göthe :

“ Misset im Naturbebrachten
 Immer eins wie alles achten
 Nichts ist drinnen, nichts ist draussen :
 Denn was innen, das ist aussen
 So ergreift ohne Säumniss
 Heilig öffentlich Geheimniss.”

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