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in agro ciconiae, in tecto hirundines, sic aut hic aut illic turdi, qui cum sint nomine mares, re vera feminae quoque sunt. Neque id non secutum ut esset in merulis, quae nomine feminino mares quoque sunt.

- 7 Praeterea volucres cum partim advenae sint, ut hirundines et grues, partim vernaculae, ut gallinae ac columbae, de illo genere sunt turdi adventicio ac quotannis in Italiam trans mare advolant circiter aequinoctium autumnale et eodem revolant ad aequinoctium vernum, et alio tempore turtures ac coturnices immani numero. Hoc ita fieri apparet in insulis propinquis Pontiis, Palmariae, Pandateriae. Ibi enim in prima volatura cum veniunt, morantur dies paucos requiescendi causa itemque faciunt, cum ex Italia trans mare remeant.
- Appius Axio, Si quinque milia hoc coieceris, inquit, et erit epulum ac triumphus, sexaginta milia quae vis statim in fenus des licebit multum. Tum mihi, tu dic illut alterum genus ornithonis, qui animi causa constitutus a te sub Casino fertur, in quo diceris longe vicisse non modo archetypon inventoris nostri ornithotrophion M. Laeni Strabonis, qui Brundisii hospes noster primus in peristylo habuit exhedra conclusas aves, quas pasceret obiecto rete, sed etiam
- 9 in Tusculano magna aedificia Luculli. Quoi ego: Cum habeam sub oppido Casino flumen, quod per villam fluat, liquidum et altum marginibus lapideis, latum pedes quinquaginta septem, et e villa in villam pontibus transeatur, longum pedes DCCCCL derectum ab insula, quae est in imo fluvio, ubi con-

¹ This strange addition may be part of Varro's queer grammarian humour.

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birds, storks in the field, swallows under the roof [and though their name (turdi) is masculine, there are in fact females too; nor is the case otherwise as regards blackbirds (merulae)—though they have a feminine name, there are also males]. Again, birds being partly migratory, as swallows and cranes, and partly indigenous, as hens and doves, fieldfares belong to the former class, the migratory, and fly yearly across the sea into Italy about the time of the autumnal equinox, and back again whence they came about the spring equinox, as do turtle-doves and quail at another season in vast numbers. The proof of this is seen in the near-by islands of Pontiae, Palmaria, and Pandateria; for when they arrive in these at the first migration, they remain there for a few days to rest, and do the same when they leave Italy for their return across the sea.

"If you put 5,000 birds into this aviary," said Appius to Axius, "and there comes a banquet and a triumph, you may at once put out at high interest that 60,000 sesterces which you want." Then, turning to me, he said: "Do you now describe that other kind of aviary which I am told you built for your amusement near Casinum, in the construction of which you are reputed to have far surpassed not only the archetype built by its inventor, our friend Marcus Laenius Strabo, our host at Brundisium, who was the first to keep birds penned up in a recess in his peristyle, feeding them through a net covering, but also Lucullus' huge buildings on his place at Tusculum." I replied: "I own, near the town of Casinum, a stream which runs through my villa, clear and deep, with a stone facing, 57 feet wide, and requiring bridges for passage from one side of the villa to the other; it is 950 feet in a straight line from the island in the lowest part of

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fluit altera amnis, ad summum flumen, ubi est 10 museum; circum huius ripas ambulatio sub dio pedes lata denos, ab hac est in agrum versus ornithonis locus ex duabus partibus dextra et sinistra maceriis altis conclusus. Inter quas locus qui est ornithonis deformatus ad tabulae litterariae speciem cum capitulo, forma qua est quadrata, patet in latitudinem pedes XLVIII, in longitudinem pedes LXXII; qua ad 11 capitulum rutundum est, pedes XXVII. Ad haec, ita ut in margine quasi infimo tabulae descripta sit, ambulatio, ab ornithone † plumula, in qua media sunt caveae, qua introitus in aream est. In limine, in lateribus dextra et sinistra porticus sunt primoribus columnis lapideis, pro mediis arbusculis humilibus ordinatae, cum a summa macerie ad epistylum tecta porticus sit rete cannabina et ab epistylo ad stylobaten. Hae sunt avibus omnigenus oppletae, quibus cibus ministratur per retem et aqua rivolo tenui 12 affluit. Secundum stylobatis interiorem partem dextra et sinistra ad summam aream quadratam e medio diversae duae non latae oblongae sunt piscinae ad porticus versus. Inter eas piscinas tantummodo

Various attempts have been made to reconstruct the aviary described in this paragraph. The reader may be referred to an important contribution (with ground-plan, translation of the passage, and commentary) by A. W. Van Buren and R. M. Kennedy, "Varro's Aviary at Casinum," Journal of Roman Studies, IX, 59-66. See also plates in editions of

¹ The comparison with the tabula litteraria or school-boy's "slate," clarifies the description. As the tabula was provided with a loop or ring at the top with which to carry it (cf. Horace, Sat. I, 6, 74, Epist. I, 1, 56), so the quadrangle was topped off with a projection rounded on the upper end, the capitulum. The circular building, tholos, referred to below, seems to have been erected in the rounded upper end of this capitulum.

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the stream, where another stream runs into it, to the upper part of the stream, where the Museum is situated. Along the banks of this stream there runs an uncovered walk 10 feet broad; off this walk and facing the open country is the place in which the aviary stands, shut in on two sides, right and left, by high walls. Between these lies the site of the aviary, shaped in the form of a writing-tablet with a top-piece, the quadrangular part being 48 feet in width and 72 feet in length, while at the rounded toppiece it is 27 feet. Facing this, as it were a space marked off on the lower margin of the tablet, is an uncovered walk with a plumula 2 extending from the aviary, in the middle of which are cages; and here is the entrance to the courtyard. At the entrance, on the right side and the left, are colonnades, arranged with stone columns in the outside rows and, instead of columns in the middle, with dwarf trees; while from the top of the wall to the architrave the colonnade is covered with a net of hemp, which also continues from the architrave to the base. colonnades are filled with all manner of birds, to which food is supplied through the netting, while water flows to them in a tiny rivulet. Along the inner side of the base of the columns, on the right side and on the left, and extending from the middle to the upper end of the open quadrangle, are two oblong fish-basins, not very wide, facing the colonnades. Between these basins is merely a path

Gesner and Schneider, and frontispiece in translation of Storr-Best.

² Plumula (lit. "little wing") is generally regarded by editors as quite unintelligible and corrupt. Van Buren and Kennedy (op. cit., p. 64) make out a good case for their translation "façade."

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accessus semita in tholum, qui est ultra rutundus columnatus, ut est in aede Catuli, si pro parietibus feceris columnas. Extra eas columnas est silva manu sata grandibus arboribus, ut infima perluceat, 13 tota saepta maceriis altis. Intra tholi columnas exteriores lapideas et totidem interiores ex abiete tenues locus est pedes quinque latus. Inter columnas exteriores pro pariete reticuli e nervis sunt, ut prospici in silvam possit et quae ibi sunt videri neque avis ea transire. Intra interiores columnas pro pariete rete aviarium est obiectum. Inter has et exteriores gradatim substructum ut theatridion avium, mutuli crebri in omnibus columnis impositi, sedilia avium. 14 Intra retem aves sunt omnigenus, maxime cantrices, ut luscipiolae ac merulae quibus aqua ministratur

Intra retem aves sunt omnigenus, maxime cantrices, ut lusciniolae ac merulae, quibus aqua ministratur per canaliculum, cibus obicitur sub retem. Subter columnarum stylobaten est lapis a falere pedem et dodrantem alta; ipsum falere ad duo pedes altum a stagno, latum ad quinque, ut in culcitas et columellas convivae pedibus circumire possint. Infimo intra falere est stagnum cum margine pedali et insula in medio parva. Circum falere et navalia sunt excavata anatium stabula. In insula est columella

15 excavata anatium stabula. In insula est columella, in qua intus axis, qui pro mensa sustinet rotam radia-

¹ arboribus Keil: arboribus tecta.

 $^{^{1}}$ I.e., small shelf-like projections suggesting in appearance the mutules of Doric architecture.

² The word *falere* occurs only in this passage, and we must conjecture its meaning; cf. *fala*, "platform." It seems to be a platform serving as the *lectus* or couch at the repast.

³ Keil holds that previous editors have erred in thinking that Varro entertained his guests in this building, and that the word "guests" is a playful reference to the birds; and he reminds us of Lucullus's disappointing experience in holding banquets in an aviary (Chap. 4, Sec. 3). But certainly the

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giving access to the tholos, which is a round domed building outside the quadrangle, faced with columns, such as is seen in the hall of Catulus, if you put columns instead of walls. Outside these columns is a wood planted by hand with large trees, so that the light enters only at the lower part, and the whole is enclosed with high walls. Between the outer columns of the rotunda, which are of stone, and the equal number of slender inner columns, which are of fir, is a space five feet wide. Between the exterior columns, instead of a wall there is netting of gut, so that there is a view into the wood and the objects in it, while not a bird can get out into it. In the spaces between the interior columns the aviary is enclosed with a net Between these and the exterior instead of a wall. columns there is built up step by step a sort of little bird-theatre, with brackets 1 fastened at frequent intervals to all the columns as bird-seats. Within the nettings are all manner of birds, chiefly songsters, such as nightingales and blackbirds, to which water is supplied by means of a small trench, while food is passed to them under the netting. Below the base of the columns is stone-work rising a foot and nine inches above the platform; 2 the platform itself rises about two feet above a pond, and is about five feet wide, so that the guests 3 can walk in among the benches and the small columns. At the foot of the platform inside, is the pond, with a border a foot wide, and a Along the platform also little island in the middle. docks 4 have been hollowed out as shelters for ducks. On the island is a small column, and on the inside of it is a post, which holds up, instead of a table, a wheel

arrangements named below seem better suited to people than to birds.

⁴ I.e., miniature ship-sheds.

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tam, ita ut ad extremum, ubi orbile solet esse, arcuata ¹ tabula cavata sit ut tympanum in latitudinem duo pedes et semipedem, in altitudinem palmum. Haec ab uno puero, qui ministrat, ita vertitur, ut omnia una ponantur et ad bibendum et ad edendum 16 et admoveantur ad omnes convivas. Ex suggesto faleris, ubi solent esse peripetasmata, prodeunt anates in stagnum ac nant, e quo rivus pervenit in duas, quas dixi, piscinas, ac pisciculi ultro ac citro commetant, cum et aqua calida et frigida ex orbi ligneo mensaque, quam dixi in primis radiis esse, epitoniis versis ad 17 unum quemque factum sit ut fluat convivam. Intrinsecus sub tholo stella lucifer interdiu, noctu hesperus, ita circumeunt ad infimum hemisphaerium ac moventur, ut indicent, quot sint horae. In eodem hemisphaerio medio circum cardinem est orbis ventorum octo, ut Athenis in horologio, quod fecit Cyrrestes; ibique eminens radius a cardine ad orbem ita movetur, ut eum tangat ventum, qui flet, ut intus scire possis.

18 Cum haec loqueremur, clamor fit in campo. Nos athletae comitiorum cum id fieri non miraremur propter studia suffragatorum et tamen scire vellemus,

¹ arcuata Keil: acuitum.

² Epitonium, signifying originally "key," is used in the

sense of "cock" by Vitruvius and by Seneca.

¹ The *peripetasmata* were the richly embroidered coverlets which were spread over the couches and hung down the sides to the floor; but in this case the guests would see, instead of the usual side-hangings, the open side of the platform with its duck-shelters facing the pond.

³ This is the water-clock, popularly called the "Tower of the Winds," built by Andronicus of Cyrrhus, in the first century B.C., and still to be seen. Each of its eight sides corresponded to one of the eight winds and held a picture of

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with spokes, in such fashion that on the outer rim. where the felloe usually stands, there is a curved board with raised edges like a tambourine, two and a half feet in width and a palm in height. This is revolved by a single manservant in such a way that everything to drink and eat is placed on it at once and moved around to all the guests. From the side of the platform, on which there are usually coverlets,1 the ducks come out into the pond and swim about; from this pond a stream runs into the two fish-basins which I have described. and the minnows dart back and forth, while it is so arranged that cold and warm water flows for each guest from the wooden wheel and the table which, as I have said, is at the ends of the spokes, by the turning of cocks.2 Inside under the dome of the rotunda the morning-star by day and the eveningstar at night circle around near the lower part of the hemisphere, and move in such a manner as to show what the hour is. In the middle of the same hemisphere, running around the axis, is a compass of the eight winds, as in the horologium at Athens, which was built by the Cyrrestrian; and there a pointer, projecting from the axis, runs about the compass in such a way that it touches the wind which is blowing, so that you can tell on the inside which it is."

While we were thus conversing, a shouting arose in the Campus. We old hands at politics were not surprised at this occurrence, as we knew how excited an election crowd could become, but still we wanted to know what it meant; thereupon Pantuleius

that wind. The water-clock was so arranged that it marked the hour, as Varro here describes, and the vane on the roof directed the pointer to the figure of the wind then blowing.