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Nizolius' notion of class (*multitudo*)

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1 Nizolius: victim of an inadequate historiography of philosophy

The current, prevailing structure of the historiography of Western philosophy includes four main periods: ancient, medieval, early modern, and a final, hard to describe, sequence of two centuries (19th and 20th). This division appears to indicate that those who do "early modern" take care of the three centuries (1500- 1800) that stretch from the end of the medieval period to 1800. However, this is not the case. Generally, the focus is on Descartes and the rationalists, Locke and the empiricists, and Kant at the end. This leads to the exclusion of two groups: humanists and authors from the second scholasticism<sup>1</sup>.

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<sup>1</sup> The few second scholastic authors who are known are ineptly referred to as "late medievals". This, although not directly relevant to the humanist Nizolius, deserves a special comment. Scholasticism is often, and wrongly, identified with the medieval period. Even serious scholarly works refer to scholastic philosophy after the Middle Ages with the misnomer "late medieval". The adjective "late" is doubly inept. 1) It is ridiculous to describe what happens in the 16th or 17th centuries as occurring "late in the 15th century". 2) The adjective "late" (*spät*) has been already, for a long time, a technical term, intended to designate the last segment of the Middle Ages (*früh, hoch, spät*). As Carlo Giacon advised long ago (I

To be blamed for this historiographical gap are not only the historians of philosophy but, in the first place, also the "early modern" philosophers themselves— with the remarkable exception of Leibniz. The "early modern" philosophers make a point of disconnecting themselves from scholasticism and humanism, or of hiding the connection — Descartes, for instance, tells Mersenne to keep secret his editorial project of publishing an annotated, comparative edition of Eustachius' treatise<sup>2</sup> (the artisan Eustachius appears to be relevant also in connection with Leibniz; in fact, one of the teachers of Leibniz, Scherzer, wrote a Breviarium Eustachianum , cf. Wundt, p. 141-2).

To be sure, the just stated complaints made more sense several decades ago (as when I stated them in the section History of philosophy re-examined of my Studies) than now. Much work has been already done towards the correction of the described historiographical inadequacy and towards the restoration of a proper understanding of the phrase "early modern philosophy", both at a general level (the development and growth of the Überweg is perhaps the best expression thereof) and in special fields (logic<sup>3</sup>, metaphysics<sup>4</sup>). This revisionism with regard to what should be meant by "early modern philosophy" has motivated the opening up of overseas branches of European scholasticism<sup>5</sup>, and has been reflected in major editorial projects<sup>6</sup>. Nevertheless, all these advances have not yet caught on in the philosophical community at large, and much less in the teaching plans of graduate programs in philosophy. To the extent that the history of philosophy is part of philosophy, it is clear that a better philosophical historiography should benefit those who are engaged in the study of philosophy. For example, the so-called "Locke's general triangle" turns out to be an offspring of classical predication theory, and as such can be better understood. It is a pity to see that Husserl's great mind,

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pensiero cristiano), it is wiser to distinguish three scholasticisms: first (medieval), second (early modern, Neuzeit, both catholic and protestant), and third (roughly corresponding to the neo-scholastic, or rather neo-thomist, a bit artificial revival in the late 19th century).

<sup>2</sup> Descartes, in his letter to Mersenne of Nov 11 1640, complains about the scholastics and says that he "bought a copy of the Philosophy of Fr. Eustache of S Paul, which seems to me the best book of its kind ever made. I would be glad to know if the author is still alive"; then he explains his project of writing a book with Eustachius' text plus his own (Descartes') comments, in order to make a comparison of the two philosophies. However, he does not want to publicize this involvement with the scholastics, and he adds: "But please do not tell anyone of this plan...".

<sup>3</sup> The huge information on the Neuzeit logic already offered by the great scholar L. Rabus in the 19th century remained unnoticed until the second half of the 20th century, when the work of Risse, Ashworth, and others focused on that period., when the work of Risse, Ashworth, and others focused on that period.

<sup>4</sup>Max Wundt's work, although published in 1939, became influential long after World War 2.

<sup>5</sup> Cf. my La filosofía en la época colonial.

<sup>6</sup> Especially noteworthy is the project directed by Joseph Freedman "Philosophy and the Liberal Arts in the Early Modern Period", IDC publisher, The Netherlands.

in his discussion of the triangle (Logische Untersuchungen, II, §11), is unaware of its scholastic background. (Berkeley, without whose help the triangle paragraph might have remained unnoticed, hidden in the fourth book of the Essay, was not unaware of the scholastic connection but, precisely, he wanted to dis-connect himself from those he called, negatively, "the great masters of abstraction", Treatise, Introduction, 17).

Given such a defective historiography, an author like the Italian humanist Mario Nizolio (Nizolius, Nizzoli, 1488-1567), is likely to be overlooked. In fact, medievalists, for chronological reasons, do not have to study him, and his name is not in the standard list of readings required for proficiency in "early modern philosophy". Only the experts on humanism or the Leibniz -scholars know of him.

Nizolius produced two main works. One of them is a Latin lexicon based on Cicero, that had numerous editions between 1535 and 1820. The other: De veris principiis (Parma, 1533), honored by the fact that Leibniz published a second edition of it, is the philosophically important one, to be considered in this paper.

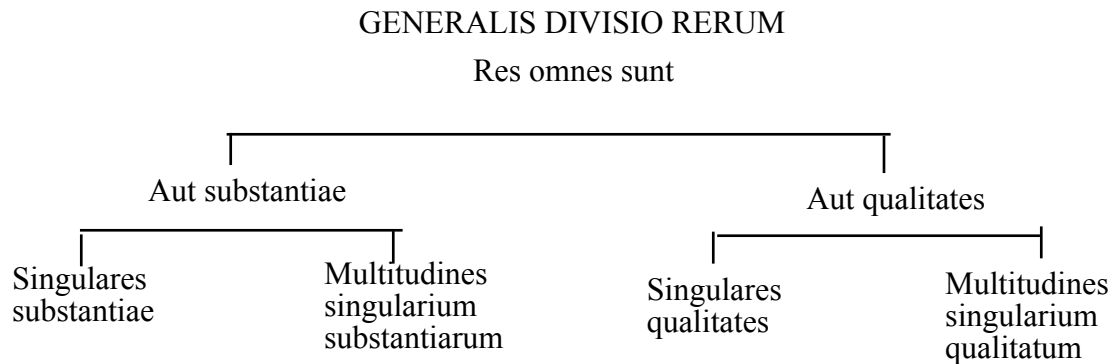
## 2 Ontology as "fundamentum" of language

According to Nizolius, quatuor esse prima rerum genera, nec plura nec pauciora, nempe substantias, qualitates, singularia, et multitudines singularium (there are four primary classes of things, namely substances, qualities, singulars, and collections of singulars, Breen I, 39; Bk. I, 3<sup>7</sup>; I will translate multitudo with "collection"). This is not meant to classify all there is into four disjoint classes; rather, all there is is first divided into two disjoint classes: substances and qualities, and then again each of these is divided into singularia and multitudines singularium: Rerum autem prima genera ....in summa quatuor sunt, nam omnia ... sunt aut substantiae aut qualitates, et rursus omnes tam substantiae quam qualitates, aut singularia sunt aut multitudines singularium (The primary classes of things are in sum four, for all are...either substances or qualities, and again all substances as well as qualities are either singulars or collections of singulars; Breen I, 38; Bk. I, 3). That there is first a division of all there is into substances and qualities, and then each of them is divided into singulars and collections is confirmed by

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<sup>7</sup> Nizolius' text will be cited in two ways: first the Breen edition volume (I or II) and page number; secondly, the book (I, II, III, or IV) and the chapter. The latter reference is independent of the Breen edition, and may facilitate the access to the earlier editions or to translations.

the following diagram found in the Conclusiones, following Book IV, at the end of De veris principiis (Breen II, 196):



One of the Conclusiones at the end of De veris principiis puts this, interestingly, in terms of the porphyrian trees of the classical tradition, highlighting the neglected trees for categories other than substance<sup>8</sup>: Arbor generica substantiae tota constat ex singularibus et multitudines singularium, eodemque modo arbores reliquorum generum, in quibus praeter singularia et multitudines singularium omnino nihil aliud vere reperitur (The tree for substance entirely consists of singulars and collections of singulars, and in the same way the trees of the other categories, where aside from singulars and collections of singulars there is absolutely nothing else, Breen II, 195).

Thus, collections of individual accidents (or qualities, in Nizolius' terminology) are in the category of accident, and may be called accidents; for example, if we call W the collection of instances of white, and H the collection of all human beings, W is an accident or quality, and H is a substance. It is certainly awkward to view H as a substance and W as a quality, as if they were on a par with individual humans or individual instances of white. This may be a bit of sloppiness on the part of Nizolius, but let us recall that also the Aristotelian -scholastic tradition had universal substances and universal accidents.

<sup>8</sup> While here Nizolius suggests that there are several other categories aside from substance, in ch. 9 of Bk. I, he states that there are only two genera (categories): substances and accidents (qualities). Strictly, he admits just one category: the collection of absolutely all individuals: multitudo singularium, longe omnium maxima; ideoque a nobis genus generalissimum recte appellatum (the collection of singulars, by far the maximal one, and therefore called by us the most general collection, Breen I, 199, Conclusiones, after Bk. IV).

Substances are described, unsurprisingly, as those things quarum proprius essendi modus est, ut naturaliter per se stent, et in alio non existant (whose proper way of being is that they naturally stand by themselves, and do not exist in another, Breen I, 38; Bk.I, 3). The examples given by Nizolius of substances include misleading items; his list starts with Socrates, homo, animal... The two latter terms might be understood, by an unprepared reader, as counting universals among substances, as in the Aristotelian terminological tradition. Nothing of course could be farther away from Nizolius' mind than the recognition of universals. His main objective in De veris principiis is precisely the obliteration of universals. When he lists homo and animal among substances he does not mean universals; rather, he means one of two things: individual substances (when for example "homo" is actually used to denote a particular man, and should be expanded into "hic homo") or collections of individual substances, which collections are not, of course, universals for Nizolius.

With regard to qualities Nizolius makes a terminological point: quae a recentioribus Dialecticis appellantur accidentia, ea omnia a veteribus Latinis dici et vocari qualitates (all those things that are called accidents by modern dialecticians are called qualities by the older Latin authors, Breen I, 38; Bk. I, 3). And then it is not surprising, again, to learn that the modus essendi (mode or way of being) of qualities est plane contrarium superiori, hoc est, ut semper in alio existant, nempe in substantia tanquam in subjecto, et nunquam per se stent (is clearly contrary to the above one, i.e. they exist always in another, namely in a substance as in a subject, and stand never by themselves, Breen I, 38; Bk. I, 3).

While the modi essendi of substances and qualities are familiar in classical ontology, less so are the two further modi essendi distinguished by Nizolius. The fourfold classification of ways of beings is presented by Nizolius as correlated to the fourfold classification of entities: et totidem proprios essendi rerum modos, nec plures nec pauciores, hoc est, per se stare, in alio existere, unum et solum esse, ex multis unis solisqueque constare (and as many proper ways of being, neither more nor less, i.e. to stand by itself, to exist in another, to be one and alone, to consist of many that are one and alone, Breen I, 39; Bk. I, 3). I will refer to the two latter as "being in isolation" and "being as a collection" respectively. As for being in isolation, Nizolius writes: res singulares, quae et ipsae hunc habent proprium essendi modum, ut sint unae et solae per se separatim ab aliis, non multae et pluris simul acceptae (singular things, which have a way of being according to which they are one and alone, separately from others, not many and several taken at the

same time, Breen I, 38; Bk. I, 3). The manner of being of collections is described as follows: Modus autem essendi proprius huius generis rerum est, ut sint non unae et solae per se ac separatim captae, ...sed multae ac plures simul ac semel quasi in unum gregem comprehensae (the way of being proper of this class of things is not to be one and alone by themselves and taken separately... but many and several at the same time and at once, as if gathered in one flock, Breen I, 39; Bk. I, 3).

It was observed above that at least in some passages Nizolius says or implies that collections of substances are again substances, and collections of accidents (qualities in his terminology) are again accidents. As said, such a view, especially after learning about the nature of substances and qualities, seems very odd. In what sense should a collection of entities per se stantes (standing by themselves: substances) be again an entity per se stans? In what sense should a collection of entities that exist in alio (accidents) be again an entity that exists in alio? There appears to be here a conceptual shortcoming on the part of Nizolius, but also, as said above, let us not forget that the terminology of the Aristotelian- scholastic tradition had universal substances and universal accidents. It is as hard to make sense of a universal that is a substance or an accident as it is to understand in what sense a collection can be a substance or an accident. Nizolius may be just carrying over the bad terminology. Besides, all in all, a reader of De veris principiis does not see that Nizolius is very interested in highlighting the issue of whether collections of substances are substances and collections of qualities are qualities.

The fourfold classification of things is an extensional version of a classification that has been crucial in the history of Western metaphysics, since Aristotle. Plato (Socrates) introduced the distinction singular- universal, Aristotle (or at any rate the author of Categories, ch. 2) added the distinction substance- accident, and combined the two distinctions into a fourfold classification of all entities: individual substances (for example Socrates or this man), individual accidents (for example this white), universal substances (man), and universal accidents (white). Because of diagrams found in early editions and manuscripts, I have referred to this doctrine as "the ontological square" (as a counterpart of the famous "logical square")<sup>9</sup>. Nizolius replaces the universals, both

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<sup>9</sup> Studies, ch. 1. and The ontological square.

substances and accidents, by collections of individuals<sup>10</sup>, so that his ontological square looks as follows:

Nizolian ontological square

collections of individual substances	collections of individual qualities
individual substances	individual qualities

In the classical square, as I have represented it in previous diagrams, the upper left box contains substances (man), and the upper right box contains universal accidents (white). To be sure, such substances and accidents in the upper boxes are not individuals (like this man, or this white), they are universals. Instead of universal substances Nizolius has collections of individual substances, instead of universal accidents Nizolius has collections of individual accidents. As said above, there are passages in Nizolius indicating that he would view collections of individual substances as substances, and collections of individual accidents as accidents.

At this point one may raise the issue of Nizolius' originality, particularly with regard to the medieval or scholastic philosophy. It seems, at least prima facie, that the interest in the idea of multitudo or collection occurs mainly in the early medieval period— but a precise evaluation is not attempted here.

The classification of entities is presented as the foundation —fundamentum— of a general classification of nomina, names. As Nizolius puts it: incipiamus, a generali

<sup>10</sup> Previous to mathematical logic it is rare to find classes, sets, collections, extensions...focused upon by philosophers. An overview is in Frisch. See also my La jerarquía.

omnium rerum divisione sumentes exordium, et ab hoc rursus quasi fundamento, ad omnium nominum divisionem explicationemque redeuntes... (let us begin, starting from a general division of all things, and from this, as from a foundation, turn to the division and explication of all names, Breen I, 38; Bk. I, 3). In fact, having presented his ontology, Nizolius moves to the presentation of the linguistic distinctions based upon that ontology: Ad significandum igitur haec quatuor rerum genera atque hos quatuor essendi modos, ab Authoribus linguarum, sive a Grammaticis excogitata et inventa fuerunt quatuor itidem nominum genera, et quatuor eorum significandi modi, ut unicuique rerum generi, et suo ac proprio essendi modo responderet unum genus nominum, et unus significandi modus (Hence to signify these four classes of things and these four ways of being, four classes of name and four ways of signification were introduced by the authors of languages and by the grammarians, in order to correlate to each class of things and its proper way of being one class of names and one way of signifying, Breen I, 39; Bk. I, 3).

The four classes of names are: substantiva, adjectiva, propria et appellativa (appellatives<sup>11</sup>). Substantive names denote substances, adjectives denote qualities, proper names denote individuals in isolation, appellatives denote collections. The four modes of signifying are: substantive sive per modum per se stantis, adjective sive per modum in alio existentis, proprie sive per modum essendi unius ac solius per se, appellative praesertim collective<sup>12</sup> sive per modum essendi multorum ac plurium simul. (substantively or by way of standing by itself, adjectively or by way of existing in another, properly or by way of existing as one and alone, appellatively, and this mainly collectively or by way of existing as many and several at the same time)<sup>13</sup>.

### 3 Proper and appellative names.

The distinction between proper names and appellative names is explained in chapter 4 of Book I. The proper name denotes an isolated object, not a collection of objects. The appellative denotes a collection, a multitudo, or totum discretum. Both types of names are

<sup>11</sup> Cf. the Oxford English Dictionary interesting article.

<sup>12</sup> The phrase "appellative praesertim collective" anticipates the subdivision of appellatives into collective and non-collective or simple, to be introduced by Nizolius in his ch. 4 of Bk. I. But it is not clear why "praesertim".

<sup>13</sup> This text I quote from the Leibniz 1674 edition of Nizolius: p. 20, liber i, cap iii. The reason is that the Breen edition text (I, 39) seems to involve some typographical confusion.

known, in the scholastic logic disliked by Nizolius, as singular and general or common terms respectively.

There are three key notions that emerge within the presentation of proper and appellative names: numerus (singular or plural number), positio (which is, simply, to use the name either properly and naturally or improperly or "figuratively"), pronuntiatio (concrete or "token" occurrence of the name).

Proper names are quickly taken care of by Nizolius, in a short paragraph at the beginning of ch. 4 of Bk. I. He claims not to have major disagreements with the "barbarians" in this respect. There is a proper use of proper names and an improper use of them. The latter occurs when their plural is employed.

The discussion of appellative names occupies almost all of chapter 4 of Book I. There are two classes of them. First, the collective appellatives, such as exercitus, species, genus... Even in the singular these names denote a collection. The second class of appellatives is certainly the critical one for Nizolius' project. It includes all those names that the pseudophilosophi have employed in order to develop their "absurd" doctrine of universals: homo, arbor,... For the designation of this class of appellatives Nizolius does not find an established terminology. He begins by proposing non-collective, but then prefers simplex.

The simple appellatives are intermediate (media, Breen I, 45, second paragraph; Bk. I, 4) between proper names, which always signify just one entity, not a collection, and the collective appellatives, which always signify a collection, i.e. many entities. The simple appellatives signify sometimes one thing, sometimes a collection, as a consequence of the influence of the three above mentioned factors: number, use (positio), and occurrence (pronuntiatio).

Simple appellatives in the singular signify exactly one thing. In "Socrates est homo", "homo" signifies Socrates. Evidently the copula "est" works here as identity (but Nizolius does not even hint at this), and there is no other possibility but to read "homo" as "hic homo", a description of Socrates. Evidently this is a contextual matter, since in, say, "Plato est homo", "homo" signifies Plato. The difference among various pronuntiationes of the name plays a role here: when "homo" occurs in "Socrates est homo" it signifies Socrates, when it occurs in "Plato est homo" it signifies Plato. In a

highly questionable way, Nizolius ends up telling us that in, for example, the conjunction "Socrates est homo and Plato est homo", the two pronuntiationes of "homo" are equivocal (Breen I, 51-52; Bk. I, 4). Nizolius wants to get rid of universals at any cost.

In the plural, the simple appellatives signify a collection; "homines" signifies the collection of human beings.

So far we have seen the impact of number and pronuntiatio on the semantics of simple appellatives. The impact of the third, above mentioned factor, namely the positio (use) is also important. There is a proper or natural use, and there is an improper use or figuratus. In the improper use the simple appellative in the singular signifies the collection; for example, "homo" signifies the collection of all humans, just like the plural "homines".

#### 4 "Est" replaced by "est in"

When the simple appellative is taken in improper (figuratus) use, standing not for the individual indicated by the context but for the collection, and occurs at the right of the copula est, the word "est" must be replaced by "est in" or even by a more emphatic phrase such as "continentur in". This is explained by Nizolius in terms of switching from the casus rectus to the casus obliquus. The point is not minor or casual— it is, on the contrary, a very systematic part of Nizolius' doctrine. Here are a few texts:

1) non enim ego concedo aut ullum genus verum de suis speciebus, aut ullam speciem veram de suis individuus in recto casu vere praedicari. Similiterque in illis enuntiationibus, Socrates est homo, homo est animal, aperte nego et hominem in superiore proprie esse speciem, et animal in posteriore proprie esse genus... (For I do not admit that any true genus is predicated truly of its species, or any true species is predicated truly of its individuals in the nominative [in recto casu]. And similarly in these sentences: "Socrates est homo", "homo est animal", I openly deny that "homo" in the former is properly a species, and "animal" in the latter is properly a genus...Breen I, 44- 45; Bk. I, 4).

2) ...cum dicimus, hominem esse speciem animalis, et animal esse genus hominis, tam hominem quam animal accipi debere non proprie sed figurate, pro omnibus hominibus, et pro omnibus animalibus: perinde ac si diceretur, omnes singulares homines, sive omne genus hominum, sive omnium singularium hominum multitudo, quod idem valet, est et continentur in genere sive in multitudine omnium singularium animalium, tanquam minus genus in majore genere, sive minor multitudo in majore multitudine...(When we say that human is a species of

animal, and animal is genus of human, both human and animal must be taken not properly but figuratively, standing for all humans, and for all animals; just as if one said: all singular humans, or the entire human genus, or the collection of all singular humans, which is equivalent, is and is contained in the genus or in the collection of all singular animals, as a smaller genus in a larger genus, or a minor collection in a larger collection... Breen I, 52- 53; Bk. I, 4).

3) At nostrum universum minime in recto casu de ulla sua parte praedicatur: Quis enim ferat, si quis ita dicat, vel homo est universum genus animalium ? vel candor est universum genus colorum? certe nemo, non magis quam si diceret, unum civem esse universum populum, et unum militem esse universum exercitum. (But our universal is not at all predicated of any of its parts in the nominative [in recto casu]: who would tolerate someone saying "man is the entire collection [genus] of animals? or "white is the entire collection [genus] of colors? certainly nobody, just as nobody would accept statements such as: "one citizen is the entire population" and "one soldier is the entire army", Breen I, 72; Bk. I, 7).

4) Postremo etiam si homo et animal in illis ipsis enuntiatis [Socrates est homo, homo est animal] ut res sunt, concederentur dici et praedicari de subjectis suis, ...tamen adhuc non possent dici et praedicari de illis in recto casu, ...sed tantum in obliquo, ut ita dicendo, Socrates vel individuum Socratis, est in specie hominum, et homo sive species hominum est in genere animalium.(Finally, even if homo and animal in those sentences are granted to be predicated and said as things of their subjects...however they could not be said and predicated of them in the nominative...but only in obliquo, saying "Socrates or the individual Socrates is in the species of humans, and man or the species of humans is in the genus of animals, Breen I, 84; Bk. I, 7).

5) Praeterea dico, has voces animalis, et hominis, et alias similes, ut significant et usurpantur figurate pro genere animalis, pro specie hominis, et caetera vere quidem dici et praedicari de rebus, quae sunt vera animalia et veri homines, sed non in recto casu, verum in obliquo tantum, ut ita dicendo, homo est in genere animalium, non homo est genus animalium, vel homo est animal, quia falsum est hominem esse animal, intelligendo animal figurate pro toto genere animalium. Item dicendo Socrates est in specie hominum, non Socrates est species hominum, vel Socrates est homo, accipiendo hominem pro tota specie hominum, quia falsum esset.(Moreover I say that these terms: animal, human, and others similar to them, as signify and are taken figuratively for the genus of animals, for the species of humans, etc., truly for sure are said and predicated of things that are true animals and true humans, but not in the nominative, rather in obliquo, saying: man is in the genus of animals, not man is the genus of animals or man is animal, because it is false that man is animal, understanding animal figuratively for the entire genus of animals. Again, saying Socrates is in the species of humans, not Socrates is the species of humans or Socrates is human, with human standing for the entire species of humans, because this would be false, Breen I p. 99-100; Bk. I, 8)

The "est in" relations between Socrates and the collection of humans or the collection of animals and between the collection of humans and the collection of animals do not appear to be distinguished, by Nizolius, into anything resembling the modern set-theoretical membership (of an element in a set) and inclusion (of a set in another set). One should remember that Nizolius thinks in terms of parts and wholes; collections are parts of larger collections, and presumably individuals such as Socrates are also parts of the collections  
in which they belong.

With "homo est animal", there seem to be three choices. First, both "homo" and "animal" in proper use; in this case, both general terms actually become descriptions of some particular object, and "est" becomes identity: "this singular human = this singular animal". Secondly, one might want to use "homo" properly (as denoting this singular man) and "animal" figuratively, as referring to the collection; then, as in the sentence "Socrates est homo", the copula is to be expanded into "est in". Finally, if both "homo" and "animal" are taken figuratively, the copula should be replaced by "est in" and the meaning is that the collection of humans is part of the collection of animals.

The sentence "Homo est species" offers no doubts, from a Nizolian standpoint. The term "species" is one of those appellatives that denote collections even in the singular (appellative of the collective type, to be distinguished from appellatives of the simple type, like "homo", "arbor"). Thus, one is forced to use "homo" in the improper sense, as denoting the collection of humans. But, the same ambiguity should arise as in connection with "Socrates est homo". Let H be the collection of all human beings. Then we may want to say "H = this species" (just as we say "Socrates = this human") or "H is included in the collection of all species". This type of consideration, however, lies beyond the scope of Nizolius' concerns; he does not appear to reflect on collections of higher level or collections of collections, such as the collection of all species.

There seems to be no information on the semantics of quantificational phrases, although one may presume that, for example, "omnis homo" signifies the collection, and consequently a sentence like "omnis homo est animal" must be construed, without any other choice, as inclusion (est in, continetur) of the collection of humans in the collection of animals.

Finally, let us observe that the relation "est in" is transitive:

...medicinam esse artem sive in genere artium, et artem esse scientiam sive in genere scientiarum, et scientiam esse habitum, sive in genere habituum, et habitum esse cognitionem sive in genere cognitionum. Ex quo sequitur Medicinam, et quancunque aliam artem particularem, a primo ad ultimum esse in tribus generibus...(medicine is an art or in the genus of arts, and art is a science or in the genus of sciences, and science is a habit, or in the genus of habits, and habit is cognition or in the genus of cognitions. From which it follows that medicine, and any other particular art, from the first to then last, is in three genera, Breen II, p. 19; Bk. III, 2).

## 5 The ambiguous nature of the "multitudo"

Nizolian collections are discrete wholes. Nizolius admits only two types of wholes: the totum continuum, and the totum discretum. He rejects all the others, particularly the totum essentiale, totum logicum, and totum universale (Breen I, 102; Bk. I, 10). As hinted at above, it seems that Nizolius thinks of Socrates as a part of the discrete whole (the collection) homo, just like homo is part of the discrete whole animal.

A difficulty in Nizolius' notion of multitudo is that one does not know what is first: the elements or the collection. On the one hand the Nizolian collections seem to depend on their elements, to the extent that the collection disappears if the elements disappear. Consider the following statement: Si auferantur omnia singularia, ex quibus constant et composita sunt [las multitudes]: non magis praeterea quicquam remaneat aut supersit ex genere, quam ex populo, si auferantur omnes singulares populares, et de exercitu si tollantur omnes singulares milites (If all the singulars were removed, out of which the collections are made and exist, nothing more would remain or survive from the collection than if all the individuals of a community or all the solders of an army were removed, Breen I, p. 117; Bk. II, 1). Here the collections look as perishable as their elements. This is strenghtened by a curious feature of Nizolian collections. Nizolius insists that his collections, contrary to the traditional universals, are known not only by the intellect but also, at least in part, by the senses. Although I cannot see with my eyes the whole collection of humans, at least I see with my eyes this particular human in front of me, which is a part of the collection. The following passage is interesting in this connection:

Vestrum universale vos non solum ab intellectu solo fieri, sed etiam ab intellectu solo cognosci ac percipi vultis, ab exterioribus vero sensibus nequaquam. Nostrum universum licet ipsum quoque ab intellectu quodammodo fiat, ita

comprehendente, ut dixi, simul omnia singularia, et ab eodem cognoscatur intelligaturque, ut pote ab ipso comprehensum, tamen percipitur et usurpatur etiam a sensibus, tam exterioribus quam interioribus, si non omnino at certe magna ex parte. Quis enim nostrum est, qui et si non omnia, tamen aliqua videat et percipiat singularia generis animalium? generis arborum? generis herbarum? et aliorum quam plurimorum generum? certe nemo nisi plane fatuus et ineptus Philosophaster (You want that your universal not only be made by the intellect alone, but also that it be known and perceived by the intellect alone, in no way by the senses, external or internal. Our universal, although it is also somehow generated by the intellect, which comprehends at once all the singulars, and is known and understood by the intellect, in such a way that it is comprehended by it, nevertheless it is also perceived by the senses, external as well as internal, if not entirely surely to a large extent. Who among us does not see and perceive, if not all, at any rate some of the singulars of the collection of humans? of the collection of trees? of the collection of herbs? and of so many other collections? Certainly nobody except the totally foolish and inept philosophaster<sup>14</sup>, Breen I, 72; Bk.I, 7)

Thus, collections appear to be wholes of which we can perceive some parts at least through our senses. This seems to strengthen the role of the elements, of the parts.

On the other hand, however, Nizolius' multitudo often resembles a Platonic idea. In chapter 7 of Book I, within the context of wanting to secure the foundation of knowledge and science, Nizolius ascribes to his collections the same features that Plato postulated for his ideas, namely unchangeability and permanence, beyond the constant changes of the individuals that make up the collections. Consider for example the following passage: Quae quidem genera debent intelligi esse composita ex singularibus non solum quae in praesentia sunt, sed etiam, quae antea fuerint, et posthac futura sint (which collections must be understood as made of the present singulars but also of those that existed previously, and those that will exist afterwards, Breen I, p. 76; Bk. I, 7). Nizolius is interested in making sure that his collections constitute a firm basis for science. For example, the science of roses (scientia de rosa) should be independent of the fact that in winter all roses disappear. Consequently, the collection or genus of roses becomes perpetuum et immortale:

Ad haec rursus sic objicere possent Adversarii, si genus esset multitudo singularium, ut nos dicimus, fore ut genus aliquando corrumperetur, et interiret, singularia enim esse corruptioni obnoxia. Cui objectioni breviter

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<sup>14</sup> Philosophaster is an English word (plural, of course, philosophasters, and even a verb: to philosophaster): “A shallow or pseudo-philosopher; a smatterer or pretender in philosophy”, according to the Oxford English Dictionary.

respondemus...singularia quidem singillatim accepta sine ulla dubitatione morti et interitui esse opportuna. Sed si eadem universe sive in [Breen has "un"] universum accipiantur, eo modo esse incorruptibilia et aeterna, hoc est, per continuam singularium successionem...Et ita corruptio singularium individuorum definitioni nostrae nihil obest, cum semper remaneant, ut dixi, universa. Sed rursus nos urgent dicentes tempore hyemis, cum nulla est singularis rosa, ubi erit, aut ex quo constabit genus rosarum? aut de quo erit definitio ac scientia de rosa? Ad hoc quoque eodem modo respondeo...genus rosarum esse perpetuum et immortale, quemadmodum caetera genera, et constare ex rosis non solum praesentibus sed etiam preteritis et futuris. (The opponens could object here as follows. If the genus was the collection of singulars, as we say, it should at a certain point vanish, since the singulars are subject to corruption. To which objection we briefly respond...singulars for sure individually taken are subject to death and disappearance. But if they are taken globally and as a whole they are incorruptible and eternal, namely by the continuing succession of singulars... And thus the corruption of singular individuals is not an obstacle for our definition, given that the collections always remain, as I said. But again they ask, during the winter, when there are no individual roses, where should be or of what should consist the genus of roses? To this I answer in the same way...the genus of roses is perpetual and immortal, as the other genera are, and consists not only of the present roses but also of the past and future ones, Breen I, p 130, Bk. II, 1).

As Leibniz suggests, Nizolius appears to commit himself to a modalization of his collections. After one of the many, persistent Nizolian statements that the genus animal and the species homo is not the absurd universal of the dialecticians but omnia singularia animalia and omnes singulares homines... quae et qui sunt in mundo (the animals and the humans that are in the world), Leibniz inserts the following remark: quaeque fuerunt, erunt, aut esse possunt (whichever have existed, will exist, or can exist, Breen I, p. 43; Bk. I, 4).

In case one finds Nizolius' notion of collection unsatisfactory, it must be kept in mind that in his eyes collections appeared as much more reasonable than the classical universals. While we may find Nizolian collections ambiguous or unclear, Nizolius found the universals of the Aristotelian- scholastic tradition as simply absurd. Quite simply, he cannot make sense of one thing —the alleged universal— being at the same time in many others. He thinks of this as equivalent to thinking of an individual human as being at the same time in different places (ut si unus et idem homo singularis uno eodemque tempore totus et integer diceretur esse Londini, Romae, et Babylone..., as if one and the same singular human at one and the same time was said to exist, totally and completely, in London, in Rome, in Babylon..., Breen I, p. 90; Bk. I, 8). The ubiquity of the classical universals is what infuriates Nizolius. This problem he associates with the Aristotelian-

scholastic approach rather than with Plato. Plato's ideas, he claims, at least can be understood to some extent (tamen aliquo modo mente comprehendantur, Breen I, p. 112; Bk. I, end of ch. 10). Nizolius' fight against universals includes a detailed and interesting discussion of the origin of the term "universal" (unde dicatur nomen universalis: where the word "universal" comes from, Breen I, p. 61; Bk. I, 6) .

## 6 Comprehensio instead of abstractio

The mental operation by which we grasp the collections is comprehensio, which is actio quaedam sive operatio intellectus nostri qua mens hominis singularia omnia sui cuiusque generis simul et semel comprehendit (an act or operation of our intellect by which the human mind grasps all the singulars of homo and of any genus at once, Breen II 80; Bk. III, 7). We are reminded of the Cantorian definition of Menge: By "set" we mean any collection M [Zusammenfassung: reunion, bringing together] of definite, well-distinguished objects m of our intuition or of our thought (which are called the "elements" of M) into a whole (Cantor, Beiträge, §1). One full chapter (7 of Book III) is devoted to comprehension. This notion must replace, according to Nizolius, the absurd theory of abstraction that the philosophasters have used as an explanation of our knowledge of the universals. Nizolius' ferocious attack on abstraction is rather rhetorical, and does not seem to have much theoretical content. Against the traditional statement that abstrahentium non est mendacium, Nizolius affirms that the abstrahentes apertissime mentiri (those who do abstraction overtly lie, Breen I, p. 96, Bk. I, ch 8, last line).

## 7 Nominalism?

Nizolius wants to be a nominalist. In addition to a strong statement in favor of the nominales, Nizolius mentions Ockham as his hero (Breen I, p. 65; Bk. I, 6). Two problems arise with this nominalism program. First, Nizolius shares with his fellow-nominalists the leaving unexplained the fact that in rerum natura there are similitudines and conformitates (acknowledged for example in Breen I, p. 93, 95; Bk. I, 8). Secondly, when Nizolius insists on the incorruptibility and existence of his multitudines —even "in winter", when there are no individual roses—, the Nizolian collections resemble too much Plato's ideas. This is one more point where a comparison of Nizolian views with

possible antecedents, especially medieval, would be interesting. Nizolian collections are not at all the entia rationis that they appear to be in some scholastic authors.

## 8 Adjective and substantive names

We have so far considered the distinction between proper and appellative names. Let us briefly refer to the other distinction, between substantive names and adjectives, which are examined by Nizolius in the chapter 5 of the first book. Nizolius includes among substantive names not only names that signify substances (homo, animal...) but also names that by their way of signifying seem to refer to substances, whereas they really stand for qualities (dulzura, amargura...). Nizolius says that his substantive names coincide with the abstracta from the Dialectici. Adjectives, which according to Nizolius are called concrete by the Dialectici, are those which always designate a quality (it is a bit confusing that Nizolius adds: sive substantialem sive accidentalem, Breen I, p. 55; Bk. I, 5). His examples include "ligneus"; wood (lignum) is a substance, being ligneum is a quality.

As pointed out above, collections of substances appear to be regarded as substances by Nizolius, and collections of qualities (accidents) as qualities. Here again, now at the linguistic level, comes to the surface the issue of whether collections of substances are substances and collections of qualities are qualities. Can names that denote collections of substances be substantive, and names that denote collections of qualities be adjectives? Is a collection of substances a substance "standing by itself"? Is a collection of qualities a quality existing in something else?

## 9 Leibniz's criticism

Leibniz' comments and footnotes are very interesting and challenging. He rightly targets the crucial point of the nature of the collections. Given the above mentioned tensions, or ambiguities, of Nizolius' notion of multitudo, it is easy to anticipate that it will be as easy to develop objections as to reply to them. Incisively, Leibniz points out that collections will never exist, given that they are made up of past, present, and future elements, and all these elements do not exist at the same time (quoted by Breen I, p. 136; Leibniz' remark refers to a passage from Bk. II, 1). Leibniz insists that it is not necessary that individuals

exist in order to support the truth of a universal statement. Leibniz also attacks the Nizolian theory of wholes and parts, and complains about Nizolius' lack of consideration of the totum distributivum. Not much can be said here in behalf of Nizolius, except that, precisely, all he does aims at showing that there is no need, for common discourse or for science, of such distributive wholes. Leibniz's severest criticism is the one that claims that the collection- interpretation of general terms generates absurdities, such as transforming the true sentence "homo est animal" into the false sentence: "the whole human genus (collection) is animal". I have defended Nizolius from this particular Leibnizian objection in my earlier Leibniz's misunderstanding. If "est" is appropriately replaced by "est in", as Nizolius wants, no absurdities arise. I will not attempt to discuss here a recent criticism of my defense of Nizolius, regarded as "contestable" by Rauzy (ch. II, §9, p. 142).

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For my study of Nizolius, in my earlier paper as well as in the present essay, I have used the Leibniz 1674 edition (copy in Stadtbibliothek, Bern) and the Breen edition. I have not used the 1553 first edition, but Breen includes many references to it. There seems to exist a Leibniz's Handexemplar, which I have not seen. Even the recent Breen edition appears to be impossible to find in the antiquarian or second-hand market. In contrast with this situation concerning De veris principiis, Nizolius' other book: Thesaurus Ciceronianus, omnia Ciceronis uerba, omnemq; loquendi atq; eloquendi uarietatem complexus or Lexicon Ciceronianum, as it is titled in the (last?) London 1820 edition, seems to be easier to find, both in libraries and in the rare book market.

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