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By Way of Introduction: Linnæus' World

We could say that Linnæus' world began in the woods of Småland and ended in a garden in Uppland. We might also say that the difference between a woods in Småland and a garden in Uppland expresses the trajectory of Linnæus' life. Though he probably never uttered that famous epigram, "*Gud skapade, Linné ordnade*," (God made it, Linnæus arranged it), he was completely aware of what he had done to organize rationally what a prodigal Creator had strewn about the earth.[1] Whatever one wishes to think of Linnæus as a person, even as a scholar, it is important to understand that the move from taxonomical chaos to useable classification system was no small achievement. All of this, of course, keeps Linnæus firmly a "green" scholar. But the larger world he and his contemporaries lived in was far messier and indubitably less "green" than we like to think.

From beginning to end, the "long" eighteenth century,[2] perhaps

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1 For a somewhat caustic view of Linnæus' careful cure of his image, see the essay by Crister Enander, 'Carl von Linné och världens skenbara lycka,' *Tidningen Kulturen*, June 11, 2007. It is true that at the end of his life Linnæus found it difficult to believe he was not right in his opinions.

2 This is a peculiarly Anglo-American term for the period 1660 or 1688 to 1789 or 1800, that is, from the restoration of the Stuart monarchy or the "Glorious Revolution" (the deposition of James II) to the fall of the Bastille or, simply,

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like all centuries, was a time of swift change in Europe, politically, culturally, and intellectually. Politically, it saw the slow decline of a French empire and the rapid, if troubled, rise of an English one. It saw Dutch ships hard-pressed on the high seas and Russian ships challenging Swedish dominion of the Baltic. Peter the Great's foundation of his new capital in the marshes at the mouth of the River Neva was a sharp signal to the Swedes that an old culture, and an older enemy, had undergone renewal and intended to make its presence felt westward. The last quarter of the century witnessed major political upheaval, the American and French revolutions, for instance, and the drawing of new boundaries, yet again, in Poland—a place always of interest to the Swedes—and the rise of Revolutionary France and its enduring legacy in The Netherlands.

If it was no longer a "Golden Age," the eighteenth century was still pretty refulgent. Spinoza, Descartes, and Locke were long dead, but Hume, Kant, Adam Smith, and Frances Hutcheson wrote powerfully argued studies of the human political and moral condition which have left a lasting impression upon Western culture. Leibnitz, and Newton were still alive at the beginning of the century but their great scientific achievements lay behind them, while the experiments of Franklin, Lavoisier, James Hutton, and countless others brought natural philosophers to a new understanding of empirical necessity for science. The move from an Enlightenment rationality and empirical experiment to a Romantic sensibility of inner discovery is, perhaps, most clearly to be seen in the arts. Shakespeare, Molière, Racine, and Corneille were of an earlier age, but Holberg, Voltaire, Goldoni, Sheridan, and Schiller exemplify this transition, re-invigorating the theatre with new dramatic forms and purpose, moving it from plays where characters are chosen to exhibit the action, as we can see in Holberg's *Den politiske Kandstøber*

to the end of the century.

(The political tinker, 1722), to those where action is chosen to show off the characters, as in Schiller's *Kabale und Liebe* (Intrigue and love, 1783). We see, in this time, too, the definitive rise of the novel as the dominant literary form after the theatre, whose position it was to usurp in the following century. We can illustrate this shift in another, perhaps more abstract, way by comparing the music of Handel and Telemann, on the one hand, with its predominance of short, often dance-derived, forms, and the music of Haydn and Mozart, on the other, with its extensive working out of thematic material.[3]

I suppose, nonetheless, that the development most affecting the intellectual climate of the eighteenth century was the rapid increase of literacy, defined as the ability to read. The Lutheran Reformation carried within it an educational program which included expectations of an ability to read at least Luther's *Small Catechism* and, one assumes, the Bible in the vernacular. The breadth of reading literacy among a population varied greatly from place to place but can be clearly traced in Scandinavia, and especially in Sweden-Finland. Swedes have been keeping track of one another for centuries, largely through the annual visits of the local pastor to each household in his parish. These were recorded in the *husförhörslängder* (catechetical registers), and from these registers we have recently understood that reading literacy was far more extensive and occurred much earlier in Sweden-Finland than was previously thought.[4] This

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[3] I except Bach here because, though certainly of his time, he strikes me as seeking a musical direction that yet does not lead to the Viennese Classicists, on the one hand, nor simply iterate the patterns common around him, on the other. If pressed, I would argue that Bach leads more to Beethoven than to any other intermediate composer.

[4] Though there is considerable evidence of a growing ability to read before the middle of the seventeenth century, the Church Law of 1686 (which also required the pastoral visits) made it expected. See Egil Johansson, 'The History of Literacy in Sweden,' in *Literacy and Social Development in the West. A Reader*,

is confirmed from similar evidence from Denmark.[5] This fact of literacy became important for Linnæus as an exponent of what we might today call "popular science."

This literacy co-incided with, but was not clearly related to, the arrival of newspapers or, better, vernacular periodicals, each usually containing one essay on any number of subjects.[6] The models for these papers were the French *Mercure galant* (1672-74) and *Nouveau Mercure galant* (1677-1724) and, above all, the English *Spectator* (1711-12, 1714). This last had European distribution through its French translation published in The Hague. This French version was known to Linnæus' almost-exact contemporary, Olof Dalin (1708-63), an ambitious young clerk in the Stockholm governmental machinery who was looking for a way to make himself and his ideas known. This he did by writing the sensationally successful weekly paper, *Then Swänska Argus* (1732-34), which offered its readers an essay a week on various cultural, political, moral, and pædagogical topics.[7] If we cannot say that we know what people were talking about in Linnæus' day, we have some evidence that Dalin gave them something to think about.

Dalin brought to discussion such topics as national economy,

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ed. Harvey J. Graff (Cambridge, 1981), pp. 151-82, 327-28.

5 See Charlotte Appel, 'Literacy in Seventeenth Century Denmark,' in *Literacy in Medieval and Early Modern Scandinavian Culture*, ed. Pernille Hermann (Odense, 2005), pp. 323-45.

6 Though newspapers in the modern sense existed—indeed, the oldest still in circulation is said to be the Swedish *Ordinari Post Tijdender*, today called *Post- och Inrikes-Tidningar*, begun in 1645 and, with three brief lacunæ, still going—their distribution seems to have been greatly limited. Holberg's *Den politiske Kandstøber* (The political tinker, 1722) refers to such newspapers.

7 The still-standard general study of Dalin is Martin Lamm, *Olof Dalin* (Uppsala, 1908). For more on the *Argus*, see Alan Swanson, 'Olof Dalin, The International Nationalist,' *Yearbook of European Studies* 10 (1997): pp. 119-32.

foreign trade, education, the Swedish language, and public morals, generously spiced with satire of pomposity, pretense, conspicuous consumption, and other less-happy aspects of life in modern Sweden, and this in a prose that ran rhetorical circles around the competition. Apart from the fact that the essays are still delightful to read, it is of lasting importance that Dalin brought to written Swedish a new, almost breezy, fluidity and an informality not seen before in serious argument, even addressing his reader directly from the first issue as "*du*," for instance. He experimented with the form of his essays, too. In addition to the expected prose paragraphs, he used dialogues, invented letters, and even inserted short plays into his arguments to illustrate his point. Above all, he used irony with telling effect.

The ostensible setting for all of this—in direct imitation of that for *The Spectator*—was a coffeehouse, where sensible people gathered to debate these issues. Indeed, the coffeehouse itself was a recent innovation in Sweden, as was coffee, which probably arrived with the return to Sweden in 1714 of Carl XII after his Turkish exile. Coffeehouses clearly existed in Stockholm by 1732, when Dalin began his paper, because in 1733 the *Riksdag* felt the need to regulate their hours.[8] Linnæus is said to have asserted, around 1750, that "The Turks taught us…to drink Coffee."[9]

One of the pertinent essays in the *Argus* for us today is a grand

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[8] According to Claës Lundin, 'Källare och kaffehus i Stockholm under senare hälften af 1700-talet,' *Samfundet S:t Eriks Årsbok* (1903), p. 52, in 1728, there were at least fifteen coffeehouses in the Old Town, mostly on or near Riddarhustorget. A well-known, and notorious, statistic is that around 1770, when Stockholm had about 72,000 residents, there were 700 pubs and coffeehouses. See Paul Britten Austin, *Carl Michael Bellman. Genius of the Swedish Rococo* (Malmö, 1967), p. 24.

[9] Cited without source on the Uppsala University Linnaeus site, www.linnaeus.uu.se/online/pharm/kaffeete.html. See also Brian G. Gardiner, 'Linnaeus' Medical Career,' in *The Linnean* I:1 (1984), pp. 6-7.

hymn to the Swedish language itself [I:45], where Dalin argues for us to respect it and use it in a pure form instead of larding our letters with foreign words and wrinkled syntax. This particular essay, and others of a similar drift, came just about the time that the now more-powerful *Riksdag* was gearing up for the momentous constitutional session of 1733-34, which took some of its cues from the mediæval *landskapslagar* [provincial laws], whose direct and concise language Dalin had advocated. As he later wrote, "…*icke et onödigt ord: icke en illa vänd mening*...," (not an unnecessary word: not a badly turned sentence) advice as good today as it was in 1754.[10] No wonder that the young Olof Celsius (1716-94), for instance, could happily report his eagerness for the arrival of each new number.[11]

Alas, I know of no evidence that Linnæus ever read the *Argus* – it appeared while he was traveling to Lappland and to Dalarna – but he shared Dalin's passion for an exact and expressive Swedish language.[12] As early as 1734, Linnæus instructed his students, "*En simple styl, korta ord med ren mening, och undvikande af Tautologie är dett som giör ens skrifter tydlige.*"[13] (A simple style, short words with a clear meaning, and avoidance of tautology is what makes writing clear.) As he wrote in his preface to the Öland and Gotland journey (1741/1745), "*Språket pryder en wetenskap som kläderne kroppen.*"[14]

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[10] Rolf Hillman, *Svernsk prosastil under 1700-talet*, Skrifter utgivna av Nämnden för svensk språkvård 42 (Stockholm, 1970), pp. 30-31, citing Dalin's 'Korta påminnelser vid svenska skaldekonsten den 24 juli 1754,' i *Kongl. Vitterhetsakademiens handlingar* 1756.

[11] Ingemar Carlsson, *Olof Dalin.Samhällsdebattör, Historiker, Språkförnyare* (Varberg, 1997), p. 35, citing Celsius' *Åminnelse-tal* 1764, p. 24.

[12] It is reasonably probable that Linnæus and Dalin at least met one another at court, for both were in high favor there, especially with the queen.

[13] Cited from Hillman, *Svensk prosastil*, p. 68.

[14] From the foreword to *Öländska och Gothländska Resan*: cited from Hillman, *Svensk prosastil*, p. 48.

(Language graces a science as clothes do a body.) Linnæus' prose in the journals is deliberately simple and direct. The reason for this is of importance both scientifically and historically, for Linnæus was one of the earliest scientists in Sweden to publish some of his work in the vernacular, intended for a popular, now literate, readership.[15] Even in his Latin writing we can see his goal of clarity and simplicity in taxonomic description. I think it is fair to say that Linnæus genuinely wanted science to be transparent to all readers, academic as well as popular.

Indeed, in the mid-eighteenth century, there seems to arise a new interest in the nation's language generally. One prominent way this interest manifested itself was through an attempt at establishing a permanent Swedish-language theatre.[16] When the young Anders von Höpken (1712-89) returned in 1734 from his extensive travels abroad, he gathered around him a number of other like-minded young people with time on their hands and organized a theatre company, *Swenska Komedien* (1737-54). Though there had been theatre performances in Swedish earlier, especially in schools and universities, it appears that the time was now ripe for a more public endeavour.[17] The new troupe prospered for a time, and its most salient result was the bringing into being of new Swedish

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15 This was the *Öländska och Gothländska Resan* (Stockholm and Upsala, 1745).

16 The first permanent theatre can be said to have been the decade-long stay beginning in 1667 of the Dutch actor-manager Jan Baptiste van Fornenbergh (1624-97) and his company, which performed in either high- or low-German, it would seem, and a second between 1699 and 1706 with a company under Claude Rosidor (*c.*1660-*c.*1718), which seems to have performed mostly in French. There were also traveling troupes of longer or shorter residence. See Gunilla Dahlberg, *Komediantteatern i 1600-talets Stockholm*, Stockholmsmonografier 106 (Stockholm, 1992).

17 For more about this troupe and its repertory, see Tryggve Broström, *Svenska Komedien 1737-1754* (Stockholm, 1981).

plays, among them two by Dalin.[18]

"New Swedish plays" sometimes meant imitations or straight translations of foreign works, such as comedies by Molière, Hauteroche, and Holberg, but it also meant new plays, such as Carl Gyllenborg's (1679-1746), immensely successful social (and political) satire, *Swenska Sprätthöken* (The Swedish fop, 1737), or Reinhold Modée's (1698-1752) popular farces, *Fru Rangsiuk* and *Håkon Smulgråt* (both 1738). On the whole, tragedy did not have a strong hold on the repertory of *Swenska komedien*, a few plays by Voltaire (1694-1778), his *Zayre* (1737, perf. 1752) being the most prominent. Despite many public calls for new Swedish plays, few were forthcoming. It would seem that one cannot simply command plays out of thin air, and Sweden had no Holberg, who could write five hit comedies in a year. The whole enterprise came to a halt, however, largely owing to the queen's intense dislike of the Swedish language. Lovisa Ulrika's world, shaped by her childhood and youth at her brother's, Fredrick the Great's, court in Potsdam, was and remained entirely French, and when she engaged a French theatre troupe with Italian dancers and musicians in 1754, there was no longer a place for the less-experienced Swedish players. The troupe split its holdings in two, and the two smaller companies began years of touring the provinces, forbidden to play in Stockholm at all. Again, though he was much in Stockholm during the salad days of *Swenska komedien*, there is no way of saying whether or not Linnæus ever saw them perform, or if he encountered either of the two touring companies.[19] What is important for Linnæus about this

[18] *Den afvundsjuke* and *Brynilda*, both 1738.

[19] Studies of these two troupes are found in Johan Flodmark, *Stenborgska skådebanorna* (Stockholm, 1893), for Petter Stenborg's troupe and its successor company, and Ester-Margaret von Frenckell, *Comoedie directeuren Carl Gottfried Seuerling och dess hustru theater directeurskan Margareta Seuerling* (Helsingfors, 1953), for Seuerling's company. It is, indeed, almost impossible to identify those

troupe, however, is not its repertory but its mere existence, for it suggested, at least to the chattering classes, that the Swedish capitol was (finally) moving again into a more international orbit.[20] The first dozen years of the troupe were also those when Linnæus was at his most active as a traveler, inside and outside Sweden, and this bespeaks not only his growing scientific curiosity about the rest of the world, but also that the internal economy was stable and productive enough to support both theatre and scientific travel, eventually on a large scale.

Between Linnæus' birth in 1707 and his arrival twenty years later at the university in Lund in 1727 (unusually late for someone to begin university in those days), Sweden underwent a major social and political transformation. Its Finnish provinces were pressed by a renascent Russia, and its Baltic states were lost forever. After losing the Battle of Poltava in 1709 to the Russian czar, Sweden's warrior-king, Charles XII, went into five years of exile in Turkey. The king's return in 1714 brought a new military adventure in Norway which culminated in his death in 1718 at Fredrikshald and the accession of his sister, Ulrika Eleanora. After a great deal of wrangling with the Council of State over the terms of her rule, the new queen recused in 1720 in favor of her husband, Fredrik of Hesse. In the end, a now-weakened monarchy bowed to the pressures of a frustrated nobility and something like a modern two-party system of government emerged, one loosely monarchical, the "Hats," and

who attended *Swenska komedien*. The closest we can come are some remarks by Gustaf Johan Ehrensvärd in his *Dagbok förda vid Gustaf III:s hof*, ed. E.V. Montan, 2 bd. (Stockholm, 1877-78), I:209-10, who notes that there was general enthusiasm for theatre at the time (*smaken för skådespel var…allmän den tiden*), but it is clear that he refers to its interest among the upper classes. Looking back in 1776 on what he calls a "golden age," he asserts that even the court (perhaps just members thereof) attended Swenska komedien.

[20] This was indubitably the project of Gustaf III in the last quarter of the century, for which he also used the theatre as a show-piece.

one loosely bourgeois-aristocratic, the "Caps." Looking back, we call this new kind of political tussling the "Age of Freedom," but it is fair to say, I think, that none of this had any effect upon Linné's youth or upbringing.

In 1707, Råshult, in Stenbrohult parish, was, as it still is, a small village in southern Småland. Its pastor was Nils Linnæus, whose Latin name tells us he had had a considerable education. Boys who went to the *gymnasium* almost always Latinized their names, in part because that harmonized with the language of their education. Many kept those names, probably because they were also a sign of higher social status. Being a clergyman meant that Nils Linnæus had also gone to university before being ordained. Nils Linnæus was an enthusiastic amateur botanist, as well, and it is reasonable to see this as the ignition of his son's interest. Like his father, his mother Christina also came from a clerical family. Unlike his father, she was apparently less-convinced that her son's interest in medicine was as safe a choice of profession as was becoming a pastor.[21]

Indeed, I think the two most important early influences upon Linnæus' subsequent development were his father's stimulation of his interest in botany, and Latin. The first took him outside his home environment, put him literally into the field, and the second gave him access to a rapidly-expanding world of scientific dis-

[21] Gunnar Broberg, *et al.*, *Linnéminnen i Uppsala* (Uppsala:, 1982), p. 4. Though we tend to see Linnæus almost exclusively as a botanist, it is worth remembering that his doctoral thesis, defended in the then-University of Harderwijk, was about the causes of fever and earned him the degree of Medicinæ Doctor. Since there was no academic discipline of Botany or, even, Biology, at that time, in order to get a university professorship, the closest Linnæus could come was a degree in medicine. The thesis was: Carolus Linnæus, *Hypothesis nova de febrium intermittentium causa* (Harderovici, 1735). It is further worth remembering that he was also the physician to the queen, even while he was professor in Uppsala.

course, aided by an equally rapidly-expanding print culture.

That Latin discourse was broadened by a growing network of communication, not only physically (with new and better roads, for instance) but intellectually, as well. The intellectual wind that ruffled Linnæus' hair was driven by the spirit of Utilitarianism, philosophically articulated by Adam Smith, but understood in commercial terms. At its narrowest, it meant that science, like all other intellectual pursuit, ought to serve the national economic interest. Linnæus understood this, and part of his research was aimed at discovering plants and animals that would survive in the Swedish climate and yield useable domestic produce. Strange as it may seem, one of the eagerly-sought plants was the mulberry (*Morus rubra*) upon which the silk-worm fed. In the great European upper-class passion in the eighteenth century for all things Chinese, silk cloth had a high value, and a local silk industry would keep prices down.[22]

The political and cultural headiness of the "Age of Freedom" impinged upon the university in Uppsala in 1750, when it was proposed that the university teach practical subjects and the first chairs in physics and chemistry were appointed.[23] But it was also a time when the known—that is, European—botanical world was ex-

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[22] The task of looking for this plant fell to Pehr Kalm, whose journey to North America took place 1747-51. See his journal, *Resejournal over resan till Norra Amerika*, ed. John E. Roos and Harry Krogerus, 4 bd., (Helsingfors, 1966-88), for example, his remarks on November 12 (OS)/23 (NS), 1749, IV:178-79. See also Wilfred Blunt, *The Compleat Naturalist. A Life of Linnaeus* (London, 1971), p. 184. That such commercial searches could be corrupted is easily illustrated by the "tulip wars" of 1636-37, which poured energy and money into a useless product. See Ann Goldgar, *Tulipmania: Money, Honour and Knowledge in the Dutch Golden Age* (Chicago, 2007).

[23] They went to Samuel Klingenstierna (1698-1765) and Johan Gottschalk Wallerius (1709-85) respectively. Tore Frängsmyr, 'Linnaeus in His Swedish Context,' in John Weinstock, ed. *Contemporary Perspectives on Linnaeus* (Lanham, MD, 1985), pp. 184-87.

panding by the steady discovery of new and unknown plants and animals, and these needed description and names. It is important to note here that, owing to its geography, Sweden had a limited flora relative to other, more southern, parts of Europe. In this sense, one might have expected that Swedish flora could actually be mastered by one botanist.

The seventeenth and eighteenth centuries might be called the heroic age of science (then called natural philosophy). The period was dominated by strong characters who knew there were new things to be discovered every day, but who also understood that reasoning about them had to be tested by experience. This approach of thesis *and* experiment was abetted by its rapid dissemination in print and by its discussion in societies formed for that purpose, such as the Académie Française (Paris, 1639), the Royal Society (London, 1662), The Junto and the American Philosophical Society (Philadelphia (1727 and 1734), and Vetenskapsakademien (Stockholm, 1739, in the founding of which, Linnæus had a leading role). In Sweden alone in Linnæus' day, men such as Urban Hiärne (1641-1724), Torbjörn Bergman (1735-84), and Carl Wilhelm Scheele (1742-86) were revolutionizing and systematizing the science of chemistry and discovering new chemical elements along the way. Anders Celsius (1704-44), an astronomer, devised a better scale for measuring temperature and Peter Wilhelm Wargentin (1717-83) made a lasting contribution to study of the movements of the moon and Jupiter. Before he became a mystic, Emmanuel Swedenborg (1688-1772) was well-known in Sweden for his mineralogical studies and for his interest in practical technology. Equally important, however, was Swedenborg's founding of what is thought to be the first scientific journal in Sweden, *Dædelus Hyperboreus*, which lasted, alas, only two years (1716-18). Impressive as this is for a tiny country, it cannot measure up, except in specific instances, to the scientific advances further south in Europe. To

some extent, Linnæus' journey to The Netherlands, France, and England can be seen as coming in that context: the need both to learn about what others were doing in practical terms and the need to make himself known faster outside the North, for which purpose Latin was the vehicle. It would seem, in fact, that despite his three years in Holland, Linnæus never learned Dutch: his spoken and written languages were Swedish and Latin.[24]

While there is no useful instrument for measuring something as vague as "general interest" in a subject, especially two or three hundred years ago, it would seem, to judge by hindsight, that in at least three areas of natural science there was a broad surge of experimental interest, in physics, chemistry, and biology, especially botany. In physics, the work of Newton and, to some extent, Descartes, had pushed assumed frontiers back. In chemistry, the move from a phlogistic to an atomic theory of elements accelerated during the eighteenth century and displaced the former by the beginning of the nineteenth, largely through the work of the English chemist, John Dalton (1766-1844), whose theory was refined and popularized by the Swede, Jöns Jacob Berzelius (1779-1848).

In biology, the situation was complex and confused. The seventeenth and eighteenth centuries were times of great discovery for Europeans. Their ships sailed everywhere in the world and they brought back examples of what they found there. Among the botanical specimens, many were unknown to the European climate, and they needed names.

The naming of things, which we call taxonomy, is an old human habit. We understand things when they are set in the context of other things, ideally something we already know. Giving a name to something we do not know is also a way of taking possession of it,

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[24] See Frans A. Stafleu, *Linnaeus and the Linnaeans* (Utrecht, 1971), p. 22. Linnæus may well have been the last great international scholar for whom Latin was the principal language of communication.

of bringing it under our control. This is not news. In our Western ambit, we may see Aristotle (384-22 BC) as the "father" of taxonomy (indeed, of scientific method generally), and in the botanical studies of his pupil, Theophrastus (372?-287? BC), we can see the first scientific principle, close observation, at work.

Clearly, things can be grouped by size, shape, color and a dozen other characteristics. Indeed, modern field guides to flowering plants, for instance are usually arranged by the color of the flower, that being the easiest characteristic for an amateur to see, and their common names often reflect this arrangement: the "bluebell," the "goldenrod," the "redbud," and so on. And we still use color adjectives today, of course, often, alas, to divide people.

As late as the seventeenth century, there was the remains of a large-scale, if vague, general organizing principle, known as the "Great Chain of Being."[25] This Neo-Platonic idea has as its fundamental assumption that the world is full: that is, that everything has already been created. To this assumption came to be attached the idea that everything that has been created still exists. Together, this is known as the principle of "Plenitude" or "Fullness." To this principle was coupled the notion of "Perfection," everything that existed could be understood as an expression of its perfection, often thought of in terms of "simplicity" or "unity." This universe was then understood by means of the metaphor of the "chain," a series of linked entities, usually pictured vertically. God, the most creative, animate, and perfect thing, was at the top and, therefore, earth, the most inanimate thing (it was thought), was at the bottom. (Curiously, in Linnæus' system, owing to the vertical arrangement of his illustration of it in the *Systema naturæ* (1735), the *Species* in any *Genus*, the *realia*, get more complex as one descends.) The function

[25] The classic study of this phenomenon is by A.O. Lovejoy, *The Great Chain of Being. A Study of the History of an Idea* (Cambridge, MA, 1936).

of taxonomical research, then, was to place each thing that exists into its proper place in the chain. The existence of anything is always relative to some other entity.

Derived from the notion of hierarchy implicit in this system, clearly in practice but problematically in theory, was a parallel political notion that came to be asserted as the "divine right of kings." This view of the monarch as standing in a direct personal relationship with God (and therefore above mere human law) had a short run in early seventeenth-century England and a longer episode during most of the seventeenth-century in France, and it fluoresced briefly in Sweden in the 1690's.

By the eighteenth century, the practical aspects of this world--view were rapidly being jettisoned under the impact of new discoveries. Of particular importance to Linnæus in overcoming this artificial world-view was the earlier taxonomic work of the Englishman, John Ray (1628-1705), and that of the Frenchman, Joseph Pitton de Tournefort (1656-1708), who were both concerned with finding stable elements of flowering plants upon which to base a more broadly applicable classification system. The terms of their work did not extend much beyond *genus* and *species*. At the same time, the discovery of fossils in Sweden should have challenged the concept of fullness, but did not until the following century. Hierarchical thinking and the idea of fullness still operated as organizing metaphors: after all, in the real world, there were still real kings who had real subjects, who walked on a firm and unchanging ground beneath them, though Linnæus did not hold this view of the earth.[26] It is demonstrable that, until late in his career, when he began to talk of systemic relationships in terms of a "network" [*reti-*

[26] Linnæus understood that the relationship between water and land in eastern Sweden had changed over the centuries but seems to have seen this as supporting his view that the earth had once consisted of one vast island, on which all species existed together. Interestingly, tectonic plate theory could be seen as coherent with this view.

culum],[27] Linnæus accepted this hierarchical world-view, even though the core of his system asserts vigorously that everything that exists, exists only at the *species* level. Interestingly, this was a central assumption, as well, in the work of Linnæus' great rival in popularity, the French naturalist, Georges Louis le Clerc de Buffon (1707-88). Every structure above the *species* level is only organizing metaphor. One is, in fact, tempted to argue that the heart of Linnæus' system is democratic. That is, seen horizontally instead of vertically, the task of the taxonomer is to place the object *next to*, but on the same level as, something else similar. A king is, therefore, taxonomically at the same level as a peasant or, even, an academic.

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One of the difficulties of talking about Linnæus is that we almost always see him from one side, usually only as a sort of super-scientist, ever concentrated on his subject to the exclusion of anything else. Linnæus certainly filled that image and actively promoted it. Indeed, we often picture him as a kind of botanical nerd, mulching away in his garden, always on the look-out for a deviant pistil or a wayward stamen. We see him as the ruler of a strange academic tower sending out definitive botanical epistles to a public hanging upon his judgments. Wilfred Blunt, on the other hand, gives evidence that Linnæus was an inspiring teacher, interested in having his students see that what they were studying close at hand was part of a larger system of nature.[28]

For Linnæus the scientist, that system was centered upon a Creator. He had learned his father's lessons well, and appears to

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[27] Stafleu, *Linnæus*, p. 133.

[28] Blunt, *Compleat Naturalist*, pp. 154-56. But see also his chapter, 'Linnaeus *en pantoufles*,' pp. 166-80, for a rounder, if not always positive, evaluation of Linnæus' personality by his contemporaries.

have entertained no doubt that the greater system began with and included God. This makes many of us uncomfortable in our day, but it helps explain his approach, especially when we set it in the context of the notion of Fullness. Linnæus was not much interested in epistemology (how things come to be) but he was intensely interested in ontology (what things are). By 1754, however, he had come to an understanding of what fossils represented – earlier life now extinct – even if he did not make the leap to some sort of evolutionary view of them, probably because he did not have enough examples.[29]

Linnæus clearly understood that his world was not limited to the woods of Småland and the gardens of Uppland. Sending his students around the world to collect new things for him to examine was part of his general *nyfikenhet*, his curiosity or even nosiness about what he did not know. Ever the practical teacher, his sexual system of classifying flowering plants was not intended as the final word – which could only be given by Linnæus himself – but as a generally reliable field guide for reasonably intelligent students. His immense correspondence kept him aware of what else there was in the world, even as the heart of his interest was in natural history. He understood that he was a philosopher—hence his ever-enlarged *magnum opus*, *Philosophia botanica*—who yet produced the first reliable pharmacopæia, *Materia medica* (1749-63). It is, in the end, the coupling of the philosophical to the practical that gives his name such resonance today.

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[29] A good short survey of Linnæus' geological interest is in Brian G. Gardiner, 'Linnaeus' Geological Career,' *The Linnean* 5:1 (January 1989): pp. 28-44.