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THE SECRETION OF A PEARL AS A SYMBOL FOR THE BIRTH OF A PRINCE

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This article will focus on an emblem conceived by the French Jesuit François Mangot at the occasion of the birth of Louis of France, the first son of Louis XIV. The young prince was born on the First of November 1661 at the castle of Fontainebleau, quite soon after the marriage of his parents (Louis XIV and Maria Theresia of Spain, married in June 1660). Just like 23 years earlier for the birth of Louis XIV himself (1638), the French Jesuits produced a large amount of genethliac literature to celebrate the birth of the Dauphin. Among many others, François Mangot s.j., as a professor of rhetoric at the Jesuit college of Toulouse,[1] published a booklet of twelve emblems, entitled: *Delphini Galliarum Serenissimi ortus, XII inscriptionibus, totidemque emblematis atque elogiis celebratus* ('The birth of the most serene Dauphin of France, celebrated by twelve inscriptions, emblems and praises').[2] The twelve emblems are related to twelve qualifications of the *partus* (a word referring both to the childbirth and to the offspring itself): the *partus* is said to be *laetificus, pacificus, dives, purus* and so on. Each qualification is illustrated by a symbolic motif. The motifs are mainly taken from the natural world: we find celestial phenomena (sunrise (twice), rainbow, parhelion,[3] Delphinus' constellation), plants, real or mythological (rose, lily, *ramus aureus*), animals, real or mythological (oyster, phoenix), as well as one hero (Hercules) and one geometrical motif (a circle's centre and radii). I will concentrate here upon the oyster-and-pearl emblem (number 11, p. 21-22), whose theme is: *partus caelestis.* As we will see, the emblem relies on two postulates from natural sciences (the fact that pearls are generated by dew, and the fact that this dew is coming down from the stars); but none of these postulates corresponds to the state of natural sciences at the time of the poet.

Mangot's pearl emblem: a first reading

Illustrating the theme *Delphini partus caelestis,* emblem XI is entitled *Unio e concha* ('A pearl from an oyster shell'). The engraving shows a shell on a shore, next to a reed; the shell is partially open, and a pearl is visible at the inside; drops are falling from the sky and entering into the shell. Under the engraving stands the motto: *Caelitus in terris nascor* ('I was born on earth coming from heaven') [Fig. 1].

[1] The two professors of rhetoric of the college of Toulouse for the year 1661-1662 were P. Petrus Rodelle and P. François Mangot (ARSI, TOLOS 6 (Catal. breves 1651-1680), fol. 131^{v} – 132^{v}). Through the *litterae annuae,* we have a quite detailed description of the rejoicings staged at the college for the birth of Louis of France (ARSI, TOLOS 18 (Hist. 1640-1762), fol. 129^{v}: *Collegium Tolosanum*): the school organized an emblematic *affixio* on the subject '*Delphinus publica Felicitas*'; in the middle of the schoolyard, an ephemeral temple was erected to the goddess Felicitas, with on its top a representation of the goddess bearing the Child in her arms. Moreover, the two professors of rhetoric each published a *poeticum opus.* Last but not least, at the occasion of the visit of Armand Bourbon de Conty and his wife, a theatre play was staged, with as argument the question whether the education of the Dauphin should better be entrusted to Mars (i.e., the War) or to Pax (i.e., the Peace).

[2] Mangot Franciscus s.j., *Delphini Galliarum Serenissimi ortus, XII inscriptionibus, totidemque emblematis atque elogiis celebratus* (Toulouse, Boude: 1662).

[3] A refraction of the sun's image in the sky.

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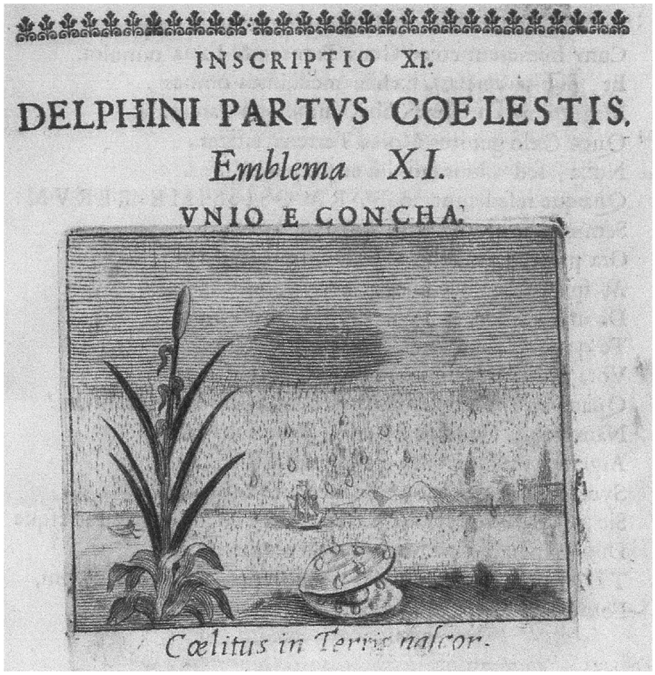

The rather lengthy epigram (35 hexameters)[4] first suggests that some terrestrial things are actually celestial both in origin (*ortus ducunt, exordia debent*) and in 'material composition' (the *elementa*) (l. 1-3). The poet gives as example the 'birth' of the oyster pearl (l. 4: *ortus gemmae*), which happens among seaweeds but is actually due to the stars, forming the pearl with dew (l. 6: *formant sidera rore*). Mangot then comes to the French Dauphin. He is in the same case of being born on earth (*terrae,* l. 7 and 11) but of having a celestial origin (*caelum, sidera, caelitus* on lines 9 and 11) – line 11 quotes the emblem's motto. In the following lines, the poet develops the various ways in which the Dauphin can be considered of celestial origin: the marriage of his parents was celestial, since it happened under the auspices of God (l. 11-16); the parents themselves are celestial by their virtue, and have certainly transmitted their *dotes* and *mores* to the child (l. 17-25);[5] and lastly, the birth is a heavenly gift in response to the many prayers and vows formulated at this end by the royal family, but also by whole Europe (l. 26-28). Only the last of these three explanations matches the pearl symbolism; it is followed by a repetition of the story of the generation of the pearls (l. 29-31), and by its application to the Dauphin. Lines 32-35 are cleverly mixing the two levels of comparison: some syntagmas refer to the compared realities (the pious words uttered by French people l. 32-33, the *gremium* of Theresia l. 34), some to the comparing motifs (the dripping stars l. 35), and some are mixing both (the Dauphin as 'gem of the House of Bourbon' (*o Borbonidum gemma*),[6] l. 32; and the 'seaweeds of wealthy Europe' (*Europae ad divitis algam*), l. 34). This is how we can reconstruct the allegorical correlations (only point 3 is more hypothetical) :

Pearl	Dauphin
Shell	Theresia
Movement of opening itself towards heavens[7]	Prayers of the people
Shore with seaweeds	Europe
Stars dripping with dew	Heavenly intervention in the birth

[4] An edition of the full Latin text is given in appendix.
[5] A marginal note recalls that Louis XIV was *Adeodatus.*
[6] For the use of *gemma,* cf. line 4.
[7] Cf. l. 30: *dum* [*concha*] *pandit ad aethera pectus.*

Pearls generated by dew

The most popular version in classical tradition about the origin of pearls[8] seems indeed to have been that of the dew. It is fully told by Pliny, whose narrative is paraphrased by Ammianus Marcellinus[9] and Solinus,[10] and then taken over in all the medieval western tradition. Following Pliny, pearls are a kind of *partus* (offspring) of the oysters. At certain periods of the year, the oysters come to the surface of the sea and open their valves to be fertilized by the dew. The quality of the pearls depends on the quality of the dew and of the sky – clear or cloudy, in the morning or in the evening:

> *Has* [=*conchas*] *ubi genitalis anni stimularit hora, pandentes se quadam oscitatione impleri roscido conceptu tradunt, gravidas postea eniti, partumque concharum esse margaritas, pro qualitate roris accepti: si purus influxerit, candorem conspici, si vero turbidus, et fetum sordescere. Eundem pallere caelo minante : conceptum ex eo quippe constare, caelique eis maiorem societatem esse quam maris, inde nubilum trahi colorem aut pro claritate matutina serenum.*[11]
>
> These [shells], we are told, when stimulated by the generative season of the year gape open as it were and are filled with dewy pregnancy, and subsequently when heavy are delivered, and the offspring of the shells are pearls that correspond to the quality of the dew received: if it was a pure inflow, their brilliance is conspicuous but if it was turbid, the product also becomes dirty in colour. Also if the sky is lowering (they say) the pearl is pale in colour: for it is certain that it was conceived from the sky, and that pearls have more connexion with the sky than with the sea, and derive from it a cloudy hue, or a clear one corresponding with a brilliant morning.[12]

Pearls are further believed to be sensible to storms, lightning and thunder –they are afraid of it and may even have a miscarriage (*NH,* IX, 108). Pliny also tells that pearls are sensible to sunrays, which make them redden and lose their whiteness (*NH,* IX, 109). As we can see, 'considerable significance was attached to the effects, favourable or otherwise, of contrasting atmospheric conditions'.[13] So in general, as Pliny says, pearls were believed to have 'more connexion with the sky than with the sea'.

This set of ideas is taken back in medieval encyclopaedias and lapidaries: Isidore of Seville (*Etym.,* XVI, 10), Marbode of Rennes (*De lapidibus,* L, 632-6 and 642-5), Thomas of Cantimpré (*Liber de Natura rerum,* VII, 51), Bartholomaeus Anglicus (*Livre de propriétés des choses,* XVI, 63)… It remained the dominant theory in Europe until about the middle of the sixteenth century,[14] and survived to at least the 1680s.[15]

Other explanations

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[8] A useful survey of the various traditions is provided by Donkin R.A., *Beyond Price. Pearls and Pearl-Fishing. Origins to the Age of Discoveries* (Philadelphia: 1998), chapter 1: 'Folklore and Observations to the Advent of Scientific Enquiry'.
[9] Ammianus Marcellinus, XXIII, 85-86.
[10] C. Julius Solinus, *Collectanea rerum memorabilium,* 53.
[11] Pliny, *Natural History,* IX, 107.
[12] Trans. H. Rackham, 1947, 235.
[13] Donkin, *Beyond Price* 4.
[14] Donkin, *Beyond Price* 7.
[15] Donkin, *Beyond Price* 8.

Other models of explanation were given in Antiquity, Middle Ages and Early Modern times. An alternative ancient theory was that oysters conceive pearls under the action of lightning, or in greater quantity when thunderstorms are frequent.[16] Main sources in Antiquity are Aelian[17] and Isidorus of Charax quoted by Athenaeus.[18] This tradition had posterity mainly in Christian patristic literature: the union of fire and water, and the procreation through celestial lightning, were appreciated symbols of Christ's incarnation.[19] Minor models considered pearls as bones,[20] as little stones from outwards having fallen inside the shell,[21] as eggs,[22] as verrucae…[23]

But the interpretation most in favour among early modern naturalists is that of pearls as internal concretions, or 'animal stones'. Pearls were then compared to tubercles in the flesh of swine (in Latin *grando* (in the first sense: hail, hailstone)) or to kidney stones (renal calculi). The main ancient source here is Androsthenes as quoted by Athenaeus.[24] Other ancient sources going in that direction are phrases in Pliny[25] and Aelian.[26] Isidore of Seville (*Etymologiae,* XVI, 10) tells about a 'stone born into the flesh of the shellfish, like a tubercle in the brain of a fish' (*inest enim in carne cochleae calculus natus, sicut in cerebro piscis lapillus*) – but he immediately goes on: 'it is generated by the heavenly dew, which the shellfishes absorb at a certain period of the year' (*gignitur autem de caelesti rore, quem certo anni tempore cochleae hauriunt*). Most modern naturalists, in particular the French Guillaume Rondelet (1507-1566),[27] favoured this interpretation of the internal concretion, as appears from the two following passages :

> *Eadem ratione arbitror unionem in conchis concrescere, qua grandinem in porcis, calculum in renibus vel vesica.*[28]
>
> I think that the pearl grows in the oyster in the same way as the tubercle in the swine, or the stone in the kidneys or the bladder.

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[16] On this model, see Ohly F., "Die Geburt der Perle aus dem Blitz", in Id., *Schriften zur Mittelalterlichen Bedeutungsforschung* (Darmstadt: 1977) 293-311.
[17] Aelian, *On the characteristics of animals,* X, 13.
[18] Athenaeus, *The Deipnosophists,* III, 93.
[19] The French Jesuit Théophile Raynaud gives an anthology of such passages (Raynaudus Theophilus s.j., *Nomenclator Marianus* (Lyon, Boissat-Anisson: 1639) 11-12; Id., *Opera omnia. Tomus primus : Christus Deus Homo* (Lyon, Boissat-Remeus: 1665) 359-360).
[20] Athenaeus, *The Deipnosophists,* III, 93 (referring the words of Chares of Mitylene).
[21] John Tzetzes, *Historiarum variarum chiliades,* XI, 480-488.
[22] The comparison between pearls and eggs seems to appear only in the sixteenth century (Donkin, *Beyond Price* 13) and to have known some favour in the seventeenth (Donkin, *Beyond Price* 14).
[23] Tertullian, *De cultu feminarum,* I, 6. This explanation can be assimilated to the following one.
[24] Athenaeus, *The Deipnosophists,* III, 93 (trans. C.B. Gulick, 1961, 401): 'Androsthenes, also, in the *Voyage round India,* writes as follows: "[…] The jewel occurs in the flesh of the mollusc, like the tubercle in swine"'.
[25] Pliny, *Natural History,* 9, 115: *Juba tradit Arabicis concham esse similem pectini insecto, hirsutam echinorum modo, ipsum unionem in carne grandini similem* (trans. H. Rackham, 1947, 240): 'Juba also records that the Arabs have a shell resembling a toothed comb, that bristles like a hedgehog, and has an actual pearl, resembling a hailstone, in the fleshy part').
[26] Aelian, *On the characteristics of animals,* X, 13 (trans. A. F. Scholfield, 1959, 301): 'The pearl, it seems, is like a stone produced by petrifaction'.
[27] Rondeletius Gulielmus, *Vniuersae aquatilium historiae pars altera, cum veris ipsorum imaginibus* (Lyon, Bonhomme: 1555), liber I (*De testaceis*), caput XXXV (*De concha matre unionum*, p. 33-34) and LI (*De margaritis*, p. 55-61). A slightly shorter version of the text is taken back in Gesnerus Conrad, *Historiae animalium liber IV qui est de piscium et aquatilium animantium natura.* […] *Continentur in hoc volumine Gulielmi Rondeletii quoque, medicinae professoris regii in schola Monspeliensi, et Petri Bellonii* […] *de Aquatilium singulis scripta* (Zürich, Chr. Froschoverus: 1558) 319 and 620-623.
[28] Rondeletius, *Vniuersae aquatilium historiae* 34.

> *Androstheni assentior* […] *Grandinem autem in porcis intelligere oportet, grana compacta et satis dura, per carnem sparsa, ex crassa et viscida pituita concreta atque exsiccata* [...] *Quemadmodum igitur in porcis grando, ita in conchis quibusdam uniones efficiuntur ex humore crasso et viscoso, puro tamen nec luto aut sordibus externis infecto, qui vel alimenti convenientis redundantia est, vel excrementorum* .[29]
>
> I agree with Androsthenes. […] The tubercles in the swine must be understood as dense and quite hard grains, scattered through the flesh, coming from a thick and sticky humour which has solidified and dried. […] In the same way as the tubercles in the swine, pearls are created in some shells from a thick and sticky humour, which is however pure and not soiled by mud or external dirt, and which is an overflow either of convenient food, or of excrement.

Rondelet is often quoted as a reference in this matter, and his opinion was commonly shared by modern naturalists.[30] However, all of them did not agree on the question of the origin of the liquid (the *humor*) whose concretion was supposed to form the pearls. As we have just seen, Rondelet thought it to be an excess of food or of excrement. Cardano in his *De varietate rerum* (1559) talks about a 'liquid expressed from the shell' (*liquor expressus e testa*).[31] Gabriele Fallopio (*De medicatis aquis atque de fossilibus,* 1569) thinks of a 'a pure sap that the oysters extract from the stones on which they are fixed' (*succus quidam purus, quem ostreae attrahunt ex lapidibus quibus haerent*).[32]

Besides, Rondelet insists on the fact that the pearl cannot be a *partus* of the oyster - that it is not *procreated* stricto sensu -, for a series of scientific reasons: the shells in general are not procreated by others and do not procreate something else; the same offspring cannot be generated by various species of shells (as it is the case for pearls); and if it was a true procreation, then it would be regular and seasonal (p. 56). Anselmus de Boodt (*Gemmarum et lapidum historia,* 1609)[33] has the same point, but with different arguments; if pearls were the *partus* of the oysters, then all the genus of the shells would procreate in the same way, which is not true; moreover, pearls do not have neither the oblong shape we would expect from a future oyster shell, nor the softness and flexibility which would make them able to take on any figure and extension, and hence fit *ad fabricam animalis* (p. 84).

The idea that this concretion happened as a defence mechanism against an irritant inside the shell (which corresponds to our today's explanation) only appeared later, at the beginning of the 18th century, with the paper published by René Réaumur in the *Mémoires de l'Académie Royale des Sciences* (Paris, 1717).[34]

Symbolic uses and scientific truth

[29] Rondeletius, *Vniuersae aquatilium historiae* 56-57.
[30] For example in the *Dispensatorium medicum* by Joannes Renodaeus (Frankfurt, Jacobus: 1615), whose chapter about pearls (*De materia medica,* III, 23) ends with the indication: *doctam apud Rondeletium lectionem habes* (326). Aldrovandi (*De reliquis animalibus exanguibus libri quatuor, post mortem eius editi, nempe de mollibus, crustaceis, testaceis et zoophytis* (Bologna, Ferronius: 1642) 422) summarizes: *alii* [*existimarunt*] *concharum grandinem, quorum opinio multis et Rondeletio admodum adridet* ('others think it to be a tubercle of the shell: this explanation pleases many authors, and in particular Rondelet').
[31] Cardanus Hieronymus, *De rerum varietate,* VII, 37, in *Operum tomus tertius quo continentur Physica* (Lyon, Huguetan-Ravaud: 1663) 126.
[32] Falloppius Gabriel, *De medicatis aquis atque de fossilibus* (Venice, Avantius: 1569) 98v.
[33] Boodt Anselmus Boetius de, *Gemmarum et lapidum historia* (Hanau, typis Wechelianis: 1609).
[34] Donkin, *Beyond Price* 15-16.

Emblematists and other authors using symbolic material were conscious that the progress of knowledge in natural sciences affected the value of their stock of natural symbols. I will give here two examples of authors acknowledging the clash, but deciding to use the traditional motif all the same.

Joachim Camerarius, in his *Symbola et emblemata ex aquatilibus et reptilibus desumpta* (= *Centuria quarta*, first published posthumously in 1604), devotes chapter 59 to the oyster pearl. After having summarized the version of Pliny, he goes on: 'But Hieronymus Cardanus considers this as a ridiculous fable' (*Sed hoc ut fabulosum Hieronymus Cardanus deridet*).[35] Camerarius however considers it right and pious to accommodate the old Plinian story to a moral and religious message (*Nos utut ea sint, recte tamen et pie, opinor, ad hoc accomodabimus…*). He proposes the following equivalences, on which is built his own emblem n°59:

Small and not yet beautiful pearls	Our weakness and lack of intelligence
The Sun	Jesus Christ (eternal Sun, Sun of Justice)
A serene sky	God propitious and favourable towards us
The dew	The Holy Spirit
Brightly shining pearls	The infused gifts : piety, faith, religion

The French Jesuit Théophile Raynaud also tackles the question of the origin of pearls, in his exploration of the symbols related to Christ (which has been often compared to a pearl by the Church Fathers). He acknowledges three main theories: the procreation of pearls (1) through lightning and water, (2) through the dew coming from heaven, and (3) from the very substance of the oyster shell, without any male intervention.[36] Raynaud is even more concerned with the changes in natural sciences, as he is talking about questions of dogma and about the authority of the Church Fathers.[37] He accepts the fact that the Fathers of the Church have sometimes used 'false' stories to symbolize Christian truths, and he considers that they do so *citra culpam* :

> *Quamvis autem proposita margaritae generatio minus vera habeatur, tamen Patres, quod circa alia pleraque mysteria faciunt, ex ea, quae sive vere sive falso circumfertur, margaritarum procreatione, excepto intra concham caelesti rore, declarant Christi domini productionem ex Virgine. Sic ex Phoenice, cuius narrationibus fabulae sunt attextae, exponunt et confirmant resurrectionem. Sic […] de Pelicano […] Quare citra culpam, hoc quoque loco, productionem nitentissimam Christi Domini per vulgatissimam margaritae intra ostreum ex caelesti rore procreationem declarant.*[38]
>
> Even if the proposed model for the generation of pearls [= the dew theory] is considered less true, the Fathers do however (in the same way as for many other mysteries) explain the production of Christ the Lord from the Virgin by using the story of the procreation of pearls through the reception of celestial dew inside the shell – a story that circulates, be it true or false. In the same way, they explain and confirm the resurrection by talking about the Phoenix, even if the accounts about this bird are intertwined with fables. And equally with the Pelican […]. Therefore, they are

[35] Camerarius Joachim, *Symbolorum et emblematum ex aquatilibus et reptilibus desumptorum Centuria quarta*, absoluta post eius obitum a Ludovico Camerario jurisconsulto Joachimi filio (s.l. : 1604) 59^{v}.
[36] Raynaudus, *Opera omnia. Tomus primus* 359 : *una* [*sententia*] *ex fulgetra et aqua gigni ait margaritam; altera ad rorem caelitus immissum procreationem eius refert; tertia ex substantia conchaelii margaritiferi absque mare procreari statuit margaritam*.
[37] Cf. Ohly F., "Tau und Perle. Ein Vortrag", in Id., *Schriften zur Mittelalterlichen Bedeutungsforschung* (Darmstadt: 1977) 274-292: 278.
[38] Raynaudus, *Opera omnia. Tomus primus* 361.

> not either guilty to explain the very bright production of Christ the Lord by using the very widespread story of the procreation of a pearl inside an oyster through celestial dew.

But Raynaud takes the time to explain how the 'true' natural explanation of pearls' origin is all the same adapted to symbolize the conception of Christ – and thus, how the religious symbol remains valid even at the latest state of natural sciences:

> *Supposita autem hac vera et germana margaritarum procreatione ex sola conchilii cui innascitur substantia, manifestus est effectionis Christi ex sola Deiparae substantia consensus cum margaritae effectione : quem praesertim spectarunt quotquot anteriores, dicendi modos revera falsos sectati, inde Christum cum margarita contulerunt, quod intra concham margaritiferam absque semine extrinsecus invecto conceptus sit.*[39]
>
> But if we adopt the true and authentic theory of the procreation of pearls from the only substance of the shell inside which they are born, the agreement of this story with the creation of Christ from the only substance of Mary is obvious: and it is mainly this point that the previous authors had in view, when, adopting manners of speaking which were actually false, they compared the Christ with a pearl for the very reason that pearls are conceived inside the oyster shell without any seed brought from outside.

We can note, however, that Raynaud transforms the 'scientific explanation' to retain the notion of procreation (explicitly rejected by Rondelet), because it suits best the idea of 'parthenogenesis' he wants to defend about the Virgin Mary.

Mangot, on the other hand, was not interested at all by the 'scientific' rightness of his emblem. He plays the witty game which consisted in finding, in the whole range of motifs, anecdotes, stories… coming from classical tradition, history, natural world or daily life, the best candidate to be the 'emblem' of the proposed idea – a visual motif able both to veil it and to unveil it. The chosen motif had to be well suited, witty, embedded in the general knowledge or in the literary erudition of the reader – but it did not have to be true… Other emblems from the series includes the myth of Hercules, the Phoenix, and so on.

However, there is one major element in Mangot's emblem which doesn't pertain neither to the traditional Plinian theory, nor to the modern 'scientific' one: that is, the stars.

Dew coming from the stars

If we remain in the field of natural sciences, the connection with the stars can occur at two places: either dew is always considered as emanating from the stars, or there is a specific kind of dew responsible for pearl-generation which comes down from the stars.

What was the traditional explanation of the origin of dew? Plutarch gives two of them, both in association with the moon: either the moon liquefies the air (*Moralia, Table talk,* 659B and *The face on the moon,* 940A), or it attracts the humidity of the earth, but not powerfully enough to absorb it, so that the vapour condensates again and falls back on earth under the guise of dew (*Moralia, Quaest. Nat.,* 918A). A version of the second explanation was still found in modern natural philosophy textbooks.[40] Following this explanation, dew was related to

[39] Raynaudus, *Opera omnia. Tomus primus* 361.

[40] For instance : Sancto Paulo Eustachius a, *Tertia pars summae philosophicae, quae est Physica* (Paris, Chastellain: 1609) 238 : *fit enim ros cum vapor modicus noctu paululum a terra evehitur, cumque non possit defectu caloris altius elevari, in minutissimas guttulas resolvitur*; Du Pleix Scipion, *La Physique ou Science des*

sublunary atmosphere; it was not considered originating from the higher celestial bodies, nor even impregnated by their virtues, as clearly appears, for example, in the introductory lines of the chapter on dew in the *Essay des merveilles de Nature* by Etienne Binet. To better praise afterwards the beauties of dew, father Binet starts by emphasizing its insignificance at the strict level of natural sciences, following which dew is no more than:

> une méchante petite fumée, et bien souvent puante, enlevée de quelque mare pourrie, portée au second étage de l'air [...], si toutefois elle y arrive, où étant elle se morfond aussitôt, et se ramassant dans soi-même, de là à peu s'épaissit, et se change en petites larmes…[41]
>
> a poor little vapour, often smelly, emanated from some rotten pond, brought to the second floor of the air [...] - if however it gets there -, where it suddenly gets colder, condenses, becomes thicker and turns into little tears…

Would the dew involved in pearl-generation be of a different kind? It seems that the traditional answer was no. In their respective accounts for the birth of oyster-pearls, Ammianus Marcellinus and Solinus describe the dew as *lunaris aspergo* ('lunar sprinkling') or *lunaris imber* ('lunar rain').[42] Following a single ancient source, the shells would rather open at night.[43] The detail is also in Isidore of Seville's *Etymologiae,* XII, 6, 49-50 : 'at night they go to the shore and conceive a pearl through the celestial dew'[44]– repeated by Thomas of Cantimpré, *Liber de Natura rerum,* VII, 51 : 'they go to the shore at night' (*nocturno tempore littus adeunt*). But the *stars* as such seem almost never to be mentioned in Antiquity, Middle Ages and modern Times as related to pearl generation. Aldrovandi[45] makes the synthesis of almost all that has been written about pearls, in natural history, ancient history, poetry, symbolical literature, the Bible, laws, narratives from the discovery of the New World, and so on. But he never mentions the stars as related to the generation of pearls! Even the engraving of Mangot's emblem doesn't clearly show stars in the sky.

There is however one textual place where the stars are mentioned by name in relation with pearl generation – that is, in some versions of the Greek and Latin *Physiologus*:

> *Quomodo autem nascitur margarita pronuntiabo: est lapis in mari qui vocatur sostoros; et venit a mari matutino ante lucanum; et aperit conchas (id est os suum), et degluttit caelestem rorem, et radium solis et lunae et quae sursum sunt siderum ; et sic nascitur margarita de superioribus astris.*[46]

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choses naturelles (Lyon, Rigaud: 1620) 321: 'en laquelle [région de l'air] s'engendrent la rosée et la gelée de peu de vapeurs attirées par les corps célestes pendant une nuit: lesquelles à faute de chaleur ne pouvant s'élever guère haut, viennent à se résoudre en petites gouttelettes d'eau'.

[41] Binet Etienne (ps. René François), *Essay des merveilles de Nature et des plus nobles artifices,* neuvième édition (Paris, Dugast: 1632) 600.

[42] Ammianus Marcellinus, XXIII, 85 : *humores ex lunari aspergine capiunt* ; C. Julius Solinus, *Collectanea rerum memorabilium,* 53 : *cum maxime liquitur lunaris imber, oscitatione quadam hauriunt umorem cupitum*.

[43] Athenaeus, *The Deipnosophists,* III, 93 (trans. C.B. Gulick, 1961, p. 403) [it is not clear whether Atheaneus is still quoting Isidorus of Charax in these lines] : 'In winter the mollusks have a habit of entering recesses at the bottom of the ocean; but in summer they swim about, with shells open at night but closed by day'.

[44] *Nocturno tempore litora appetant, et ex caelesti rore margaritum concipiunt*.

[45] Aldrovandi, *De reliquis animalibus* 420-445.

[46] F. J. Carmody (ed.), "*Physiologus latinus versio Y*", *University of California Publications in Classical Philology,* 12 (1944) 103-134: 120. For a Greek version, cf. *Physiologos: Le bestiaire des bestiaires,* ed., trans. and com. A. Zucker (Grenoble: 2004) 241: 'Il y a dans la mer un coquillage qu'on appelle huître. Ce coquillage sort de la mer aux premières lueurs du jour, et il ouvre alors la bouche. Il absorbe la rosée céleste et reçoit en lui les rayons du soleil, de la lune et des étoiles, et il fabrique la perle <à partir des luminaires d'en haut>'.

> I will tell how the pearl is born: there is a stone in the sea which is called *sostoros*; it comes from the sea in the morning before daybreak, and it opens its shell (that is, its mouth) and aborbs the heavenly dew and the ray of the sun and the moon and the stars that are above; and so the pearl is born from the upper celestial bodies.

But Aldrovandi and the moderns in general seem never to quote the *Physiologus*' version of pearl generation. Even the medieval bestiaries and encyclopaedias did not follow it. To my knowledge, the concerned versions of the *Physiologus* were not available in edition in the seventeenth century. Mangot might maybe have had access to some manuscript version of it. He might also have read the chapter *De margaritarum inventione et procreatione* of the *De bestiis et aliis rebus,* which closely follows that of the *Physiologus.* The *De bestiis* had been integrated inside the *opera* of Hugh of Saint Victor, and as such he knew several publications in early modern times.[47]

It is possible, but not necessary to suppose such kind of influence. Mangot might indeed also have come to the stars through another way, not linked to natural sciences, but to poetical tradition.

In poetical texts, dew could indeed be more directly associated with stars. This is notably the case in the *Pervigilium Veneris,* an anonymous poem which attracted many attention from the humanist philologists. Line 20 describes dew as follows: *Humor ille, quem serenis astra rorant noctibus* ('this liquid, which is spread by the stars on serene nights'). The verse has been imitated by Fulgentius, *Myth.,* I, 11: *Humor algens, quem serenis / astra sudant noctibus* ('the cold liquid, which is sweat by the stars on serene nights'). In his very detailed commentary to the *Veneris Pervigilium* (1644),[48] Andreas Rivinus notes the imitation by Fulgentius, wherein he underlines the change in the verb: '*sudant* pro *rorant*'; he himself proposes the emendation *plorant* in Fulgentius' text, on the authority of other classical passages using the metaphor of tears to describe the surging of natural water drops (Lucretius, I, 349 : *flere* for water permeating through stones; Columella, 10, 25: *illacrimare* for a surging spring). But Rivinus does not comment on the stars, and this absence suggests that the poetical idea of 'dew coming from the stars' did not appear as anything special at the time. We also read of *roscida astra* ('stars wet with dew') in Statius, *Theb.,* VI, 238. Besides, the very expression *rorantia astra* is found in Vergil (*En.,* 3, 567), but in another sense : in the vicinity of Charybdis, huge waves cause the stars to drip.

So the poetical tradition allowed Mangot to make a link between pearls and the higher spheres of the sky. And this link was essential to his purpose. The theme he had chosen to illustrate was that of a *partus caelestis,* of a child given by God. The stars, not the moon, were the poetic symbol of Christian heavens. Moreover, when Mangot talks about the *cognata sidera* (l.9), the stars from the same family as the child, he probably thinks about the members of the royal family which already went to heaven – and in particular Saint Louis, a 'star' in the 'heavenly court'. At least, this kind of consideration is frequent in the Jesuit 1661 genethliac production, because of the fact that the child was born on a first of November, on All Saints'Day. The syntagm *cognata sidera* is borrowed from Ovid, *M.,* 15, 839, where Jupiter

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[47] Cf. Clark W.B., "Four Latin Bestiaries and *De bestiis et aliis rebus*", in Van den Abeele B. (ed.), *Bestiaires médiévaux. Nouvelles perspectives sur les manuscrits et les traditions textuelles* (Turnhout : 2005) 49-69, esp. 49-50. Early modern editions include: Paris, 1526; Venice, 1588; Mainz and Cologne, 1617; Rouen, 1648. I consulted the last one: Hugo de Sancto Victore, *Opera omnia,* tomus II (Rouen, Berthelin: 1648) 452 (*De bestiis et aliis rebus,* III, 57): *Quomodo autem nascatur margarita, pronuntiabo. Est lapis vel piscis qui vocatur conchus, et venit ad littus maris per matutinum ante lucanum et aperit os suum, et deglutit rorem caelestem, et radium solis, et quae sursum sunt, siderum: sicque nascitur margarita de superioribus astris.*

[48] Consulted in the edition: *Pervigilium Veneris,* ex editione Petri Pithoei […] accessit ad haec Andreae Rivini commentarius (The Hague, Scheurleer: 1712).

forecasts that Augustus will have a glorious life and will, after his death, go to heaven and join 'his related stars' (including the 'star' of Caesar whose apotheosis is told by the poet a few lines below).

Conclusion

In his evocation of the pearl's birth, Mangot is not concerned with the 'scientific' rightness of the data from which he draws symbolic meanings. He does not follow at all the opinion of the modern naturalists. But he even doesn't follow the traditional view derived from Pliny, prevailing through the middle ages and still commonly referred to at the time: a view which postulated a strong relation between pearls and sublunary atmosphere with its climatic phaenomena, in particular the dew formed under the effect of the moon.

By giving a key role to the stars, Mangot does not hesitate to change the 'natural science' data in order to increase their symbolic power. His modifications however are authorized by poetic tradition and embedded in literary erudition. The version he proposes of the generation of pearls is designed to suit the best his own goal: to link the child with heavens and present it as a gift from God - a gift obtained thanks to the numerous prayers uttered among others by the Jesuit *patres* themselves,[49] as true and devoted servants of the French Crown.

Appendix: edition of the Latin poem[50]

Res ortus non usque suos elementaque ducunt
Hinc ubi nascuntur, sed nobiliore volatu
Altius assurgunt caeloque exordia debent.
Ortus hic est gemmae, reflui quae littore ponti,
Natales quamquam vilem sortitur ad algam,[51]
Non tamen hanc alga, sed formant sidera rore.
Haud aliter, Delphine, oreris: tu numine terras
Augusto dignere licet, tamen arduus infers[52]
Caelo colla puer, cognataque sidera[53] monstras,
Ut celebrare tuos possis hoc lemmate partus :
'Caelitus in terris nascor'. Quis namque verendo
Abnuat astra tuos thalamo sociasse parentes,
Si memor est horum taedas arsisse jugales
Dum Bellona suis consumeret omnia flammis,
Et cecinisse choros 'o Hymen, Hymenaee'[54] frequentes
Cum fremerent caeco gens Franca et Ibera tumultu ?
Et dubitare nefas haesisse medullitus omnes
Magnorum dotesque tibi moresque parentum,
Quos caelo genitos moles terrena fatigat
Nulla, sed affinis sustollit ad aethera virtus;[55]
Quaeque resederunt, o formosissime rerum,

Delphini parens Adeodatus

[49] One might wonder if the *patres* on line 32 do refer to the Jesuit themselves.
[50] Spelling and punctuation have been modernized.
[51] The expression *vilior alga* is in Vergil (*B.,* 7, 42) and Horace (*S.,* 2, 5, 8).
[52] The expression *sese arduus infert* is twice in Vergil (*E.,* 9, 53 and *G.,* 2, 145).
[53] *Cognata sidera*: cf. Ov., *M.,* 15, 839.
[54] Clear allusion to Catullus, 61.
[55] Verg., *E.,* 6, 130: *....aut ardens evexit ad aethera virtus.*

Semina virtutum[56] puerilibus insita fibris,
Ora per et nitidos vultus erumpere pergunt ;
At spirant mortale nihil, teque omine certo
De magnis eadem signant heroibus unum.
Te quoque roratum caelo flagrantia late
Vota probant avidaeque preces, quibus exoravit
Quam cito uterque parens et tota Europa Tonantem !
Nam veluti concham geniali rore subactam,
Argento rutilum dum pandit ad aethera pectus,
Sidereus fecundat amor stellante monili,
Sic, o Borbonidum gemmam, populusque patresque
Dum properant ambire pio te munere vocis,
Theresiae in gremio, Europaeque ad divitis algam,
Formavere tuos rorantia sidera[57] partus.

English translation

Things have not always sprung, and do not always draw their elements,
From the place where they are born; but in a nobler flight,
They rise higher and owe their beginnings to heavens.
This is the kind of birth experienced by the gem that, however
Born at the shore of the ebbing sea, amidst worthless seaweeds,
Has nothing in common with seaweeds: the Stars shape it with Dew.
This is also the way you were born, little Dauphin: even if you consider Earth
Worthy of your venerable majesty, you however rise proudly
Your neck into the sky and you show that the stars are related to you,
So that this motto is well adapted to your birth:
'I was born on earth coming from heaven'. Who indeed would refuse to admit
That the Stars have joined your parents in wedlock,
If one remembers that their wedding torches have burnt
At the time when Bellona was consuming everything with her flames,
And that numerous choirs have sung 'O Hymen Hymenaeus'
At the moment when French and Spanish people roared in a dark chaos?
Moreover, it would be sacrilege to doubt that you have received,
Fixed in your very substance, all the gifts and habits of your great parents,
They who were born of heaven[58] and are not slowed down
By any terrestrial mass, but uplifted to the ether by their ally the Virtue;
And the seeds of virtue, o most beautiful creature,
That have been sowed down into your childish fibres,
Go on surging on your face and your bright features;
They do not show anything mortal, and reveal with sure omen
That you are one out of those great Heroes.
Another proof that you have been sprinkled by heavenly dew,
Are the widely ardent wishes and eager prayers through which

[56] The concept of *semina virtutum* appears notably in Cicero, *De finibus,* 5, 7, 8 and *Tusc.,* 3, 1, 2.
[57] Cf. Verg., *En.,* 3, 567: *rorantia astra*.
[58] Marginal note: The father of the Dauphin was God-given.

Your both parents and all Europe so quickly convinced the Tonans!
Just like the shell submitted to the fertilizing dew,
When it opens its breast shining with silver towards heaven,
Is fecundated by the astral love with its starry garland,
In the same way, o dear gem of the House of Bourbon,
When people and fathers were insistently soliciting you with voice's pious office,
In the womb of Maria Theresia[59] and amidst the seaweeds of wealthy Europe,
Your generation was due to the dripping stars.

List of illustrations

Fig. 1. Mangot Franciscus s.j., *Delphini Galliarum Serenissimi ortus, XII inscriptionibus, totidemque emblematis atque elogiis celebratus* (Toulouse, Boude: 1662) 21.

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[59] Another possible interpretation of lines 32-34 would be: 'while people and fathers hurry to visit you and give you a pious verbal homage, you who are still in Theresia's bosom' – but it would fit less well with the pearl's allegorical counterpart.

- Mangot Franciscus s.j., *Delphini Galliarum Serenissimi ortus, XII inscriptionibus, totidemque emblematis atque elogiis celebratus* (Toulouse, Boude: 1662).
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