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The Black in Medieval Science: What Significance?

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My theme is the black¹ in medieval science. “Science” here refers to texts, and specifically those which came under the headings of “natural philosophy” or “medicine”, dealing with the world and bodies in it according to the order of nature as this was understood in universities. The question is first a descriptive one – what was the image of the black in these texts? – and then secondly it is interpretation – what was the significance of this image?

In gatherings of non-medieval historians there is usually some pessimism in a question about the *significance* of any medieval topic – entertaining? Yes. Significant? No. We know that the middle ages are picturesque, as we hold in our minds colourful pictures of castles and jousting knights, but are the middle ages relevant? On our particular theme, the question is sharpened by the great historiographical monument which looms over any approach to it, the two medieval volumes of *The Image of the Black in Western Art*, published in 1979.² Enormous scholarly labour went into the research into images in manuscript illustration, church sculpture and painting, heraldry and coins. The large books which emerged had beautiful illustrations and provided the reader with many interesting puzzles – how, for example, did an artist produce the staggeringly realistic portrait of a negro warrior in the mid 13th century on the cathedral at Magdeburg, and what ideas lay behind this? At the same time the attempts to interpret and contextualise the images were simultaneously clever and limited. More narrowly they were limited by the necessarily vague and conjectural nature of much medieval iconography.³ More broadly they were limited by the lack of contemporary

¹ There is nearly always a difficult problem with the specificity of a medieval authors' use of various Latin words for "black" or "dark" - where (unless it is specified) the range can not only be from black and African ("Ethiopian") to dark-skinned ("Arab" and "Indian"). It can also - and especially in the context of texts dealing with cosmetics and physiognomy - mean someone who is swarthy or sun-tanned while being seen, basically, as white.

² *The Image of the Black in Western Art*, ed. L. Bugner, 3 vols (Fribourg, Cambridge MA and London, 1969), vol 2, *From the Early Christian to the "Age of Discovery"*, in two parts, Part 1, J. Devisse, *From the Demonic Threat to the Incarnation of Sainthood*; Part 2, J. Devisse and M. Mollat, *Africans in the Christian Ordinance of the World (Fourteenth to the Sixteenth Century)*. The text in the French edition is more reliable.

³ Thus an “imperial ideology”, with an open and liberal attitude to diverse peoples, emerges from the conjectural analysis of a few images associated with three German emperors. See the review by D.B. Davis, ‘Out of the Shadows’, *New York Review of Books* (November 5 1981), 38-43.

"social" reality behind them. They were not based on a large black presence within western Europe, nor on extensive direct knowledge of the countries and peoples of central and southern Africa. And slavery wielded no influence over the image, since the fundamental equation in the high middle ages was between Slavs and slaves, not blacks and slaves, as the linguistic fact Slav:slave witnessed. If we view the high middle ages over the long duration of centuries, perhaps we should see it as an irrelevance, occurring before the real stuff begins – where by “real stuff” we mean the charting of Africa and the proper emergence of the black slavery in the early modern period.

From within medieval scholarship further questions about science arise. If there is a *new* phenomenon to study, it must be the high medieval translation into Latin and reception in western thought of Greek and Arabic science, but two objections to the significance of this process can be raised immediately. First, could it not be argued that the essentials are all in the earlier Latin texts, transmitting classical science in an unbroken tradition through the earlier middle ages, especially through Pliny’s *Natural History* and Isidore of Seville’s *Etymologies* (c.620)?⁴ Secondly, did not medieval science remain incapable of developing any proto-racial thought through its confinement to Greek environmental thought, and, specifically, the climatic-regional determinism of people’s characteristics articulated fundamentally in the Hippocratic *Airs, Waters and Places*?

What then was the image in medieval science – and what shaped the image, and what was its significance?⁵ What I am giving you is research in progress, presented like a preliminary archaeological survey of a field that needs more excavation; and primarily descriptive rather than interpretative - *what* was there? .

The fact that it would be difficult for a high medieval reader to find a copy of Pliny’s *Natural History* and to read it – complete copies of this very long work were probably very scarce – reminds us that it might be worth beginning with what was there in quantity.⁶ Where are there large numbers of still extant gathered or bound collections of parchment and paper, that is to say, manuscripts that are the “archaeological” survivals of past reading, discussion and thought? Where are the large facts?

The institutionalised higher learning that is called a university came into existence for the first in the twelfth and thirteenth centuries, with universities spreading over southern Europe together with France and England, and then from 1348 onwards over central Europe and Germany.⁷ The biographical register of Oxford graduates before 1500, necessarily only the identifiable fraction of a much larger former reality, still includes about 15,000 entries.⁸ A large graduate class came into existence in Latin Christendom. While most people think about the middle ages think of the theology faculty, a large proportion of these people studied in the faculties of Arts, Law and Medicine. Relevant to us are two of these faculties.

⁴ On the broader theme of thought about peoples, this is the view of Robert Bartlett, who has produced the most masterly accounts of high medieval “ethnographic” thought, based principally on chronicle and travel literature rather than high and late medieval university texts: *Gerald of Wales 1146-1223* (Oxford, 1982); *The Making of Europe: Conquest, Colonization and Cultural Change, 950-1350* (London, 1993), chs. 8-9; 'Medieval and Modern Concepts of Race and Ethnicity', in *Race and Ethnicity in the Middle Ages*, ed. T. Hahn, special issue of *The Journal of Medieval and Modern Studies* 31 no 1 (2001), 39-56.

⁵ An earlier approach can be found in F. de Medeiros, F. De, *L'occident et l'Afrique (XIII^e - XV^e siècle)* (Paris, 1985).

⁶ See the emphasis on incomplete mss., excerpts and abridgement in 'The Elder Pliny', in *Texts and Transmission: A Survey of the Latin Classics*, ed. L.D. Reynolds (Oxford, 1983), pp. 307-16.

⁷ The centres of higher study of the mendicant Orders are excluded here only for the sake of simplicity of exposition.

⁸ A.B. Emden, *A Biographical Register of the University of Oxford to A.D. 1500*, 3 vols (Oxford, 1957-9), iii.V: 15282.

The first is “arts”, a term misleading in modern terminology since the curriculum texts included what we call “science” and they called “natural philosophy”, including those in which the “Ethiopian” could be found, in the Latin Aristotle and the mid-13th century writings of Albert the Great. Faculty regulations in Paris specified students listening to lectures on Aristotle’s *On animals* (*De animalibus*). Paris stationers in 1304 priced one part, Aristotle’s *History of Animals* (*Historia animalium*) at 32 pence – along with Albert the Great’s version, his *Twenty-One Books on Animals* (*Libri xxi de animalibus*) at ten shillings. And the 105 still extant manuscripts of Aristotle’s *On Animals*, sometimes with notes of student or master ownership, are fragmentary archaeological survivals of the lecture rooms in which this material was hammered into the minds of students.⁹

Secondly, there is the faculty of medicine. The university trained doctor came into existence with the medieval university, eventually in large numbers, although with wide variations through Latin Christendom, forming a thin and very small proportion of the profession in north-western Europe, and a much larger proportion of it in the more advanced cities of Italy, and of course growing proportionately through the medieval centuries. Modern scholars of medieval medicine has scraped the evidential barrel for all references to practitioners, for France, for example, compiling a register of about 4100 practising before 1500, of whom just under 2000 were university graduates – both figures being a fraction of the lost past reality.¹⁰ These men had followed a formally organised degree course, which in the 13th century tended to mean lectures on an anthology of little texts called the *Art of Medicine*, later superseded - but not neatly or uniformly by Avicenna's *Canon*¹¹ and various other texts, mainly of Galen. The owner's notes, student copies, prices and still extant 113 mss of the first text in the *Art* are the material survivals of this pedagogic system,¹² while the later medieval lecture lists from Bologna convey something of students' experience.¹³ The first morning lecture in the first and fourth years and the first afternoon lectures in the second and third years were on Avicenna's *Canon*, which contained material on the Ethiopian, while another text with similar material, Galen's *On complexions* (*De complexionibus*) was lectured on in the second morning lecture of the first year and the second afternoon lecture of the third year.¹⁴

Those medical students who learnt the *Art of Medicine* began with the *Isagoge*, meaning *Introduction*, which provided fundamental principles about the body, stated in numbers and very briefly in a way that would have aided memorisation. 'Colours of course

⁹ P. Biller, *The Measure of Multitude: Population in Medieval Thought* (Oxford, 2000), ch. 10.

¹⁰ D. Jacquart, *Le milieu médical en France du XIIe au XVe siècle: en annexe 2e supplément au «Dictionnaire» d'Ernest Wickersheimer*, Centre de Recherches d'Histoire de de Philologie de la IVe Section de l'École Pratique des Hautes Études, V, Hautes Études Médiévales et Modernes 46 (Geneva and Paris, 1981), p. 363. The discussion of medieval medical manpower in M.R. McVaugh, *Medicine before the Plague: Practitioners and their Patients in the Crown of Aragon, 1285-1345* (Cambridge, 1993), ch.2, make it clear that these biographical dictionaries collect only the tip of an iceberg.

¹¹ On the medieval reception of the *Canon*, see N. Siraisi, *Avicenna in Renaissance Italy: The Canon and Medical Teaching in Italian Universities after 1500* (Princeton NJ, 1987), pp. 49-61.

¹² C. O'Boyle, *Thirteenth- and Fourteenth-Century Copies of the Ars Medicinae: A Checklist and Contents Descriptions of the Manuscripts*, Articella Studies: Texts and Interpretations in Medieval and Renaissance Medical Teaching 1 (Cambridge, 1998). No-one has dared to count the mss of the *Canon*.

¹³ They are conveniently accessed in K. Park, *Doctors and Medicine in Renaissance Florence* (Princeton NJ, 1985), pp. 245-8. For a broad view of the medical curriculum, see N.G. Siraisi, 'The medical faculty', in *A History of the University in Europe*, vol. 1, *Universities in the Middle Ages*, ed. H. de Ridder-Symoens (Cambridge, 1992), pp. 360-87.

¹⁴ Galen, *De complexionibus* ii.5 and ii.6, ed. R.J. Durling; *Burgundio of Pisa's translation of Galen's ΠΕΡΙ ΚΡΑΣΕΩΝ "De complexionibus"*, *Ars Medica: Texte und Untersuchungen zur Quellenkunde der Alten Medizin* 6, *Galenus Latinus* 1 (Berlin, 1974), pp. 79, 80 and 86.

come from exterior things, as to the Scots from cold and to the Ethiopians from heat, and from many other contingencies' - in this way the medical student had instilled into his brain the principle of an elementary division of human skin into two colours, white and black, and the causes, which were not expanded at this introductory stage.¹⁵ The student of those later medieval universities with morning lectures on Avicenna got a more elaborate account, based on a section in the *Canon* which considered varieties of quality of place and their effect on the human body. Beginning with cold, hot, wet and dry, this ended up with the four points of the compass. The student got this under the chapter headed 'On hot habitable places'. 'Hot blacken hairs ... and curl them, so that when they are gathered together they are made like pepper. They debilitate the digestive <organs>, and since there will be in them [these people] a great weakening and since humidity is diminished in them, old age comes quickly, as in the land of the blacks. For old age comes at 30 to those who live there, and their hearts are timid because their spirit is weakened. Further, the bodies of those living in hot habitable places are lighter.'¹⁶ The shortness of life of blacks living in hot places is contrasted by the longevity of non-blacks living in the north - rather than non-whites living in cold places. Listening to a lecture expounding a text that dealt in contrasting pairs and values, and grasping the association of north and cold as good and south and warm as bad, a medical student would have been encouraged to think further, mentally associating the long list of illnesses of those in the south with the physically weakened and short-lived blacks of hot regions.

These were the elementary polarities dinned into the minds of the university elite of medical graduates, and through them, and the professional careers of many of them, into the urban populations of high and later medieval Europe. Alongside them was another extraordinary and at first sight surprising means of disseminating ideas, the mendicant friars. Coming into existence in the early 13th century, the Franciscan and Dominican Orders were numbering tens of thousands by the 14th century,¹⁷ focussing on towns - by 1500, every community in France regarded as 'urban' had a mendicant convent - and focussing on hearing confessions and preaching. The tools for their preaching were portable pocketbooks with sermons - produced in such efficiency and such numbers that their main modern student has distilled what they did into the phrase *Mass Communication in a Culture without Print*.¹⁸ And behind these immediate practical tools were larger books, compendia of knowledge to be used as resource-books to aid both study and preaching. These were the three books, described by modern scholars as "encycopaedias", compiled by mendicant friars in the thirteenth century. Two of them were entirely about the world in scientific terms - the Franciscan Bartholomaeus Anglicus's *On the Properties of Things* (*De proprietatibus rerum*) and Thomas of Cantimpré *On the Nature of Things* (*De natura rerum*) as was also one of the three volumes of the *Great Mirror* (*Speculum maius*) of the

¹⁵ Johannitius, *Isagoge* xx, ed. G. von Maurach, 'Johannicius, Isagoge ad Techne Galieni', *Sudhoffs Archiv* 62 (1978), 148-74 (p. 156): Ab exterioribus nempe colores adveniunt sicut ex frigore Scotis, ex calore Aethiopicibus et ex aliis multis accidentibus.

¹⁶ Avicenna, *Liber canonis*, Liber 1, fen 2, doctrina 2, summa 1, cap. 11, De his qui proveniunt ex habitatione locis (Gerard of Cremona Latin translation; Venice, 1507, facsimile reprint, Hildesheim, 1964), fol. 32ra: Loca habitabilia calida nigrificant capillos interim (?) et crispant quosd eos collingunter piperi similes efficiuntur, digestivam debilitantes, et cum in eis maxima fuerit resolutio et minuatur humiditas, cito adveniet senium sicut in terra nigrorum. Illis namque qui ibi morantur advenit senium annis triginta et eorum corda sunt timida propterea quod spiritus multum resolvitur. Corpora preterea in locis habitabilibus calidis morantium sunt magis levia.

¹⁷ See the estimates of 28,000 Franciscans and 12,000 Dominicans in R.W. Southern, *The Western Society and the Church in the Middle Ages* (Harmondsworth, 1970), p. 285.

¹⁸ The sub-title of David d'Avray's *Medieval Marriage Sermons* (Oxford, 2001).

Dominican Vincent of Beauvais, the *Natural Mirror* (*Speculum naturale*). At least 254 mss still survive of the Latin version of Bartholomaeus, leaving aside the vernacular translations.¹⁹ At each level it is examined, the mendicant system of dissemination is a mass phenomenon, and much of it diffuses natural knowledge about the natural world.

What did these compendia contain? Bartholomaeus has 175 chapters addressing different regions and provinces of the world, and he pastes a lot that is new on to his sources. Thus in the entry for Europe and after quoting Isidore, Orosius and Pliny Bartholomaeus crisply inserts an independent statement of the superiority of European bodies. Europe feeds people that are larger in body, stronger in their force, bolder in spirit, and more beautiful in form and appearance than the people that Asia and Africa feeds, and a long account follows of the debilitating effects of heat on the Affri – Africans rather than Ethiopians.²⁰ Vincent provides a miscellany, partly drawn from medical faculty lecture texts - he repeats both the *Isagoge*²¹ and the *Canon*²² - and also from the Arts faculty lecture texts, where he retails a point about milk to which I shall return. Vincent made one skin colour natural and the other not, in the section headed *On <human> skin*: 'Among men it [skin-colour] is naturally white, except in those parts of the world where hot rays of the sun burn'.²³ Where the *Isagoge* divided humankind into the two colours white and black, represented by Ethiopians and Scots without any explicit hierarchy, Vincent made white skin colour normative. Further, he used a work which was a sort of higher or further research text in the medical faculty, Constantine the African's *Liber Pantegni*: 'Sometimes Egypt, and certainly always Ethiopia: there the colours are black, the hairs curly and hard, the skin dry, the lower part of the body thin, the face tumid [perhaps = 'with protruding features'], the eyes deep-set, the noses big and wide. Their interiors are cold, <lack of> spiritedness weakens them, from which they are cold <inside>, even though they seem to be hot'.²⁴ Copying this, Vincent was retailing a more detailed textual physiognomic caricature.

So far I have been sketching the large archaeological phenomenon: that is to say, in medieval terms the scientific picture of blacks that was disseminated through university medical education and, alongside this, the compendia of natural knowledge drawn from both medical and arts faculties that helped to inform mendicant preaching in the cities and towns of later medieval Europe. Now, many other natural philosophical and medical texts dealt with blacks or Ethiopians. These texts were not lectured upon. In one case there are only two mss.,

¹⁹ H. Meyer, *Die Enzyklopädie des Bartholomaeus Anglicus: Untersuchungen zur Überlieferungs- und Rezeptionsgeschichte von 'De Proprietatibus Rerum'*, Münstersche Mittelalterschriften 77 (Munich, 2000), pp. 41-137, where 188 complete and 66 part mss are listed. For the mss of Thomas and Vincent, see T. Kaeppli and E. Panella, *Scriptores Ordinis Praedicatorum medii aevi*, 4 vols. (Rome, 1970-93), vol. 4, pp. 347-50 Thomas, 147 mss) and 437-9. The enormous size of Vincent meant fewer copies.

²⁰ Bartholomaeus Anglicus, *De proprietatibus rerum* xv.50, (Frankfurt, 1601; reprint, Frankfurt, 1964), p. 648.

²¹ *Speculum doctrinale* xiii.50; col. 1203.

²² Twice: *Speculum doctrinale* xiii.59; col. 1209; *Speculum naturale* vi.18; cols. 380-1.

²³ *Speculum naturale* xxviii.30; col. 2012: Est autem alba naturaliter in hominibus, nisi in illis partibus orbis quas fervidi solis radii adurunt. This tightens up a passage in Thomas of Cantimpré, *Liber de natura rerum* i.42, ed. H. Boese (Berlin and New York, 1973), p. 47: cutis alba est naturaliter in hominibus in omnibus fere partibus orbis.

²⁴ *Speculum doctrinale* xiii.13; col. 1176: ...ut aliquando Aegyptus, semper vero ethiopia ibi colores nigri, crispi pili et asperi, sicca cutis, inferior pars corporis subtilis, facies tumida, oculi concavi, nasi magni et lati; interiora frigida, et ideo animositas eos debilitat, ex qua significatione, etsi non sint, videntur esse calidi. Calor enim aeris calorem naturalem ab interioribus ad exteriora protrahit: et ita refrigescunt interiora. The text in Constantine the African, *Liber Pantegni, Theorica* i.20; *Opera omnia Ysaac* (Lyons, 1515), fol. 3vb: ... ut aliquando est egyptus: semper vero in ethiopia colores sunt nigri: pili crispi et asperi: sicca cutis: inferior pars corporis subtilis: facies tumida: oculi concavi: nasi magni: atque interiora frigida. et ideo inanimositas eos debilitat: ex qua significatione: etsi non sint videntur esse exteriora protrahit: et ita frigescent interiora.

containing interesting new thought ventilated at the faculty of arts in Paris around 1300 - the MIT or All Souls of its time. We could use a modern analogy - elementary school textbooks, at ground level, academic monographs of some circulation at a second middling level, and highly important advanced research papers at a third level. Whatever flaws this model has, it is useful for simplifying and selecting what I am continuing to sketch. The second level, then, are the middling monographs, and here I select two, the Dominican Albert the Great's *On the nature of place* (*De natura loci*), from around 1250-4, which still survives in 43 mss, and the *Mirror of Medicine* (*Speculum medicine*) of the Montpellier medical writer Arnau de Vilanova (written by 1308). Albert's principal theme is the division of the world into blacks and whites, with blacks represented by Ethiopians, who get the lion's share of the text.²⁵ In a systematic natural-philosophical account, Albert brings together blackened bodies, whiteness of teeth, the particular reddish colour of tongues and throats when open, prominent mouths and eyes, porous and dry bodies, cold and timid hearts; the abundance of specific humours, the lightness of bodies and mental fatuity, the curliness of hair and its paucity, and so on. Because of the dryness of their wombs and their lack of strength, the women do not conceive easily; but because the 'members of childbirth' are loose and not thick, black women give birth easily. Because of their lack of natural strength black people age fast. I am abbreviating Albert, who outstrips his sources in comprehensiveness, thoroughness, and the 'scientisation' of blackness, which is engendered thus according to Albert. The generative seed is hot, the black woman's womb is hot and dry, it cooks the conceived seed with extremely strong cooking which blackens bodies through the burning of blood. Heat of place leads subtle dampness out of these bodies and hardens gross earthly matter, which remains and turns into blackness. Albert refers to the logical implication of regional determination of colour – that black people who go to other regions will slowly whiten - but he qualifies this, saying that they receive their blackness from the parents who were complexioned in other regions. He holds whitening at bay, therefore, to later generations, and here he also outstrips his predecessors. Although he cannot finally escape the problem of climatic determinism, he sees that it is a problem: I read him as hinting that he wants to escape its confines.

My second 'monograph' author, Arnau de Vilanova, still did what was to remain conventional for a long time, treating black people regionally. Conditioned by their distemperate region, black people are 'mainly small in stature, in form like apes, in colour black ... sparing in food, eating little, even though frequently engaging bestially in sex, regardless of sex, age and species; fragile as far as strength is concerned, but agile and very ready in running and jumping up and down.'²⁶ Arnau's synthesis of his sources shows a degradation in the image of the black in the medical thought of early 14th century Montpellier, bestialising and infantilising to a degree and in a way that is not easily paralleled in earlier western medieval medical texts.

During the 13th century there developed in several faculties an academic exercise, the debate of "quodlibetic" questions. "Quodlibet" means "whatever you want", "anything goes".

²⁵ *De natura loci* ii.3, ed. P. Hossfeld, in *Opera omnia*, ed. B. Geyer and others, 50 vols (Aschendorff, 1951-), vol. 5, Part 2, pp. 26-7; see pp. x-xv for description of the extant mss.

²⁶ Arnau de Vilanova, *Speculum introductionum medicinalium* lxxvii, *De regionibus*; *Opera nuperrime revisa* (Lyons, 1532), fol. 26ra-b: meridionales ut plurimum parvi sunt in statura et in forma symi et in colore nigri, veloces ad iram et tarde placabiles, inciviles moribus, facillime apprehensiores, precipites in iudicio et habentes impetuosam audaciam; vulnera tamen et effusionem sanguinis valde timent, natura sibi conscia paucitatis imprimente timorem illum propter quod ingeniis plus quam bello student resistere suis hostibus. Sunt etiam in cibo parcissimi, modicum valde comedentes, licet frequenter luxuriam vero bestialiter exercent, nec sexum nec etatem nec speciem attendentes. Et fragiles quidem sunt viribus sed agiles proinde ad cursum et saltum promptissimi.

Where the classroom teaching of ordinary university students remained unchanged for ages, the occasions of debating "whatever you want" questions encouraged the airing of the current and interests of the teaching masters. Though these were more often abstract philosophical or theological matters, they could be current affairs - and though current affairs were in turn more often practical pastoral or legal church matters, they were sometimes political. One dramatic example coming in the same year that the French king's expelled the Jews from his kingdom was a theological quodlibet debating precisely this, though without naming names - whether Jews expelled from one region should be expelled from another.²⁷ Among the few texts surviving from Arts faculty quodlibets, one Paris manuscript, BnF MS Lat 16089, contains the quodlibetic questions of two Arts faculty masters active in Paris university around 1300, Henry of Brussels and Henry of Germany. From comparison with the much more fully surviving theology faculty quodlibets, it seems likely that the text relating to each question, often less than 100 words, is simply a drastically reduced summary of what had happened in the lecture hall. This is extraordinarily frustrating, because what this ms shows is that Paris university around 1300 witnessed "what-you-will" debates in which the science of the period was applied, without any theological veil, to a bewildering variety of topics, and that a minority of these topics included the contemporary categories of monks, nobles, Jews and blacks. Of startling interest, of course, alongside the presence of science and the absence of theology is the co-existence in the same set of questions of two groups so heavily categorised in modern thought, Jews and blacks.

The debates involving blacks centred on milk and sex. The question raised on milk was "whether the milk of a white wetnurse is better than the milk of a black wetnurse", to which the reply was "<The milk> of the black wetnurse <is better than the milk> of a white wetnurse, because it is better digested by heat, because there is more heat in them [= in black women]."²⁸ Unlike the question on sex, this theme had a classical pedigree - it had entered the west through two 13th century translations into Latin, one from Arabic, one from Greek, of Aristotle's *History of Animals*, which included the brief and not further rationalised statement that "black women" - *mulieres nigre* - have more healthy milk than white women.²⁹ It was transmitted through the many mss of these and the Arabic-Latin translation of Avicenna's *Abbreviation On Animals* (*Abbreviatio de animalibus*) - which simply said that "black women have healthier milk",³⁰ without spelling out white women. A notes crib designed to help Arts faculty students to pass their exams, the *Authorities of Aristotle* (*Auctoritates Aristotelis*) slightly elaborates the proposition, saying that the milk of black women is "better and purer" than the milk of white women.³¹ Students' heavy use of this and

²⁷ P. Biller, 'A "scientific" view of Jews from Paris around 1300', in *Micrologus: Nature, Sciences and Medieval Societies* 8 (2001), 137-68 (pp. 137-8).

²⁸ Paris, Bibliothèque nationale de France, MS Lat 16089, fol. 74vb: Con<sequente>r queritur utrum lac nutricis albe sit melius quam lac nutricis nigre? Dicendum quod nigre uel [] quam albe, quia melius digestum a calido eo quod in eas plus est de calido.

²⁹ In the Arabic-Latin translation of Michael Scot, in Oxford, Merton College MS 278, fol. 30vb: Lac vero mulierum nigrarum est melius et pluris cibi quam mulierum albarum. There is a marginal note: Nota de lac mulieris nigre quod est melius plurisque cibi quam alterius ut albe. In the Greco-Latin translation of William of Moerbeke, William of Moerbeke Greek-Latin translation of *History of Animals: De historia animalium: Translatio Guillelmi de Moerbeke*, part 1, pp. 90-1, ed. P. Beullens and F. Bossier, Aristoteles Latinus 17.ii.i.i (Leyden, Boston and Cologne, 2000): Mulierum ... lac... et nigre albis sanius habent.

³⁰ Avicenna, *Abbreviatio de animalibus* iv.3, in Avicenna, *Opera* (Venice, 1508, reprint Frankfurt-am-Main, 1961), fol. 32rb: Mulieres nigre habent magis sanum lac.

³¹ *Auctoritates Aristotelis: un florilège médiéval. Étude historique et édition critique*, ed. J. Hamesse, Philosophes Médiévaux 17 (Louvain, Paris, 1974), p. 212 (50) Lac nigrarum mulierum est melius et purius lacte albarium mulierum.

the re-appearance of Aristotle's dictum in the compendia of Thomas of Cantimpré³² and Vincent of Beauvais³³ helped to secure the further diffusion of the point. Although Avicenna included this in his abbreviation of Aristotle, he did not include it or allude to it in his long account of milk and wet-nursing in his *Canon*,³⁴ and I have not been lucky in finding the text in other medical works, with the exception of Peter of Spain, a professor of medicine in Siena in the late 1240s.³⁵ This leads me to the conjecture that western medical authors tended to be silent except where they were deep readers of Aristotle's *On animals*, as Peter was.

When studying the transmission of such inherited material, the historian of medieval thought has to look out for the faintest alterations, which may hint at or signify adaptation to contemporary, that is to say, medieval contexts. There had been some such adaptation. In his *Book of Physiognomy (Liber phisionomiae)*, composed between 1228 and 1235), Michael Scot tampered with the colours. The better milk is now "the milk of a black woman and a brown woman" (*lac mulieris nigrae et brunae*) which is always better than the milk "of a white woman and a ruddy woman" (*mulieris albae et rubrae*); and he adds a significant rider, that no milk is better for a baby than the milk of its mother.³⁶ In his *On Animals (De animalibus)* Albert the Great follows these lines but goes further. The colour is not that of black or black and brown women but "dusky black women" - *lac mulierum nigrarum fuscarum*; this milk is better and of more nutriment than the milk of white women. And he spells out more lengthily the qualifying rider, and rationalises it. The most appropriate milk for any baby is the milk of a woman who is found most similar to the baby's mother, because the milk is more similar to the menstrual blood with which the baby was fed while in its mother's womb – so long, that is, as the woman is of good age and appropriate. The reference to her ideal ages, between 20 and 32, brings the proposition towards the discourse about the ideal nurse, and of course the whole point subverts the Aristotelian proposition.³⁷ The milk of the dusky black woman is best absolutely, but in individual cases the best milk for a baby of any particular colour will be that of its mother or of a similar woman. The intrusion of the word for wetnurse (*nutrix*) into the quodlibetic question suggests that the process of adaptation was continued in the live debate in Paris. And another collection of miscellaneous questions also produced around 1300 - less intellectually advanced than the Paris collection, which is known as *All Men (Omnes homines)* - continued the tinkering with colour, following Albert but putting the point more sharply. Black women are now dark or dusky women, *mulieres nigre* now *mulieres fusce*. "Why is the milk of dark women better than the milk of white women? The reply is that dark women are hotter than others; therefore heat digests the milk itself sufficiently and consequently it is improved".³⁸

³² *Liber de natura rerum*:lxvi; ed. Boese, p. 48: Lac mulierum nigrarum melius est quam albarum.

³³ Twice: *Speculum naturale* xxii.54 and xxviii.84; cols. 1639 and 2052: Ex *Lib de nat rer*: Lac mulierum nigrarum melius est quam albarum.

³⁴ Avicenna, *Liber canonis*, Liber 1, fen 3, doctrina 1, cap. 2 De regimine lactationis et remotionis a lacte; fols. 53vb-54ra.

³⁵ Commentary and questions on Isaac Israeli, *Diaetae universales*: Item queritur quid lac sit laudabilis, an lac femine albe an lac femine nigre, in *Omnia opera Ysaac* (Lyons, 1515), fol. 84va.

³⁶ *Libellus de secretis naturae* i.13; (Amsterdam, 1655), p. 258: Lac mulieris nigrae et brunae est melius semper illo mulieris albae et rubrae, nec est lac utilius infanti lacte suae genitricis. On the text, see D. Jacquart, 'La physiognomie à l'époque de Frédéric II: le traité de Michel Scot', *Micrologus* 2 (1994), 19-38.

³⁷ *De animalibus libri XXVI*, iii.178, ed. H. Stadler, 2 vols., Beiträge zur Geschichte der Philosophie 15-16 (1916-20), p. ? : Amplius autem lac mulierum nigrarum fuscarum melius est et pluris nutrimenti quam mulierum albarum: sed tamen unicuique infanti magis convenit lac mulieris quae similior invenitur matri suae quia lac similis est sanguini menstruo quo nutritus est infans in vulva matris dum sit bonae aetatis et convenientis: et haec aetas est quod sit supra annos XX, et infra triginta duos annos.

³⁸ *Omnes homines*, ed. E.R. Lind, *Problemata Varia Anatomica: MS 1165 The University of Bologna*, University of Kansas Publications, Humanistic Studies 38 (Lawrence, Kansas, 1968), p. 37: Item quare lac

Along with adaptation there had been development, the rationalisation of an observation in Aristotle, drawing upon two principles, on the one hand the principle of milk being produced from menstrual blood by a process of coction or digestion, using heat, and on the other hand black people possessing more heat (*calor*). The bodies of black women, possessing more heat than those of white women therefore turn blood into better milk. The text probably supplied the theme and rather longer treatment in one of the later medieval commentaries on a text of around 1300 falsely ascribed to Albert, *On the Secrets of Women* (*De Secretis mulierum*). Phrasing the question slightly differently and reverting to simple white and black - "whether the milk of a white woman or a black is more health-giving to the babies themselves" (*utrum ipsis infantibus plus valet lac mulieris albae vel nigrae*), the commentary cites Aristotle and answers the question slightly more lengthily and forcefully, spelling out more fully the cooking of menstrual substance into milk, and the better cooking of the black woman on account of her great heat.³⁹

Before commenting further, I shall outline the quodlibets on sex - three questions about women's colour or region and sex. One is whether "whether a white woman desires a man more than a black woman does".⁴⁰ Another is "whether white women desire to have sexual intercourse more than black women do".⁴¹ And a third raises this in terms of region, "whether women of hot regions are more sexually active <than those of cold regions>".⁴² The answer to the second distinguishes between desire and capacity and goes thus: "It should that white women have more capacity because they have more superfluous dampness, and pale white women <especially>, because ruddy white women are hotter than pale white women, and therefore have less superfluity <of dampness [in general]> or of menstrual <blood>. But black women desire more by reason of heat".⁴³

mulierum fuscarum sit melius quam albarum? Respondetur quia fusce mulieres sunt calidiores quam alie; ideo calor digerit sufficienter ipsum lac et per consequens melioratur. On this text, see M. Schleissner, "Sexuality and Reproduction in the late medieval *Problemata Aristotelis*", in *Licht der Natur. Medizin in Fachliteratur und Dichtung. Festschrift für Gundolf Keil zum 60. Geburtstag*, ed. J. Domes et al., Göppinger Arbeiten zur Germanistik 585 (Göppingen 1994), pp. 383-98.

³⁹ [Pseudo-] Albert the Great, *De secretis mulierum* (1478, n.p., unfoliated; Oxford, Bodleian Library, II. Q. 6. 37), commentary on text *Circa ea que et cetera*: Sed iterum diceret aliquis ex quo quedam mulieres sunt albe et alie nigre utrum ipsis infantibus plus valeat lac mulieris albe quam nigre. Ad hoc respondet Arist. 3. de animalibus quod lac mulieris nigre melius est et ratio quia mulieres nigre habent multum de caliditate ideo propter fortem caliditatem substantia menstrualis in material lactis bene decoquitur. Sed in albis mulieribus quia non habent tantam caliditatem non ita bene decoquitur. Et ideo secundum medicos lac caprarum nigrarum melior est quam albarum.

⁴⁰ Bibliothèque nationale de France, MS Lat 16089, fol. 63ra: utrum mulier alba magis appet(at) uirum quam nigra.

⁴¹ Bibliothèque nationale de France, MS Lat 16089, fol. 74va: utrum albe mulieres magis appetant coire quam nigre.

⁴² Bibliothèque nationale de France, MS Lat 16089, fols. 63vb-64ra: Alia fuit utrum mulieres regionibus calidis sint magis coitiue.

⁴³ Dicendum quod albe plus possunt quia plus habent de superfluo humido, et albe pallide quia albe rubeae calidiores sunt albis pallidis, ideo minus habent de superfluo uel de menstro; sed nigre plus appetunt ratione calidi. The theme is continued in *All Men* and commentaries on *On the Secrets of Women*. While the question in *All Men* is also about colour and sex, it is set within a question about delight in the pure colours. Why do some people delight more in the colour white, and some people more in the colour black. And the question about colour and sex is notably different. Why do some women love black men more and some women, by contrast, love white men more? Some women are of warm nature, and these love black men more, for blackness follows warmth, but some women are frigid, and these delight in whiteness, because frigidity is of the nature of whiteness. The questions are markedly different - the Paris quodlibet is about sex, with the verb "to have sex" (*coire*), and it compares the desire and capacity of women of different colours, black and white, without any mention of the colour of the man whom they desire or with whom they have sex. By contrast *All Men* uses the verb *amare*, to love. But when we turn to the commentaries on *On the Secrets of Women*, what we find

Unlike milk, the theme of blacks and sex was not borrowed from an earlier Greek natural-philosophical or Arabic medical tradition, and it seems to have been an invention of the medieval west. There was quite a long western tradition, before 1300, of texts containing miscellaneous scientific themes put in the form of questions and short answers, a substantial number of which looked at sexual matters.⁴⁴ Two very important sets are worth comparing here, one called the *Salernitan Problems*, put together around 1200 and reflecting the interests of teaching masters from the west of England,⁴⁵ and a series of lectures given by Albert the Great to Dominican students in Cologne in 1258, called *Questions on On Animals (Quaestiones super De animalibus)*. The sharing of preoccupations - with sexual intercourse and its pleasure and comparison of appetite or pleasure in men and women - serves to highlight what is distinctive and new in Albert's lectures. Grouping his questions carefully, Albert addressed directly the dependence of appetite on heat and cold, introducing the theme of region - whether the working of stronger in a hot region. Having argued first for a cold region, when he turns to a hot region he appeals to what he says "is manifest to one's sense [or observation] (*patet ad sensum*): people of hot countries are stimulated more to sex. In a question on women producing seed he moves on to colour, and to stronger emphasis. There can in some way be seed in women, he says, when heat is lit in them. "And such seed is found more in black women than in white women – more in black women, who engage in sex more than all women. For black women are hotter – and most of all dusky women – who are the sweetest to have sex with, as lechers say – and because the mouth of their vulva is temperate and gently embraces the penis."⁴⁶

Patient work tracing of sources, and through them more narrowly literary and intellectual influences, is needed before the speculation about medieval context starts. For example, one text which is cited prominently in *On the nature of place* - Ptolemy's *Tetrabiblos* - provides an account of the four regions of the world and the characteristics of their inhabitants, very heavily in terms of sex – men in the north-west being devoid of passion for women and associating with men, the burning desire for and relations with women in the south-west, and so on. As a sexual cartography of the world, it is an obvious candidate for influence on Albert's interest in variations in sexual activity according to region. This point brings me full circle, to the beginning of this lecture and the two volumes dealing with the middle ages which appeared in the study of *The Image of the Black in Western Art* twenty-four years ago. These volumes' display of monumental labour in the research and compilation of images - prior to their interpretation - is a leitmotif for what I have to say: leitmotif rather than comparison, because I do not claim to be doing anything as grand. The tracing and reading of texts is in progress, not finished - there are many medical

dominating is the discourse about the comparison between black and white women's desire for sex, in an erotic discourse in which the colour "livid" also enters - for example Bibliothèque nationale de France, MS Lat 7106, fols. 59v-r and 60v: Nota quod fusce et nigre mulieres et livide pre ceteris magis appetunt coitum quia sunt calidiores. ...7o dubitatur quare mulieres albe plus appetunt coitum quam nigre. Dicitur quod plus habundant albe in superfluis quam nigre verumptamen mulieres nigre habent intensiorem effectum quam albe quia sperma earum est magis digestum. ... Nota quod mulieres livide et fusce pre ceteris appetunt coitum quia sunt calidiores aliis, sed pingues et rosee bene appetunt multum possunt et multum dant.

⁴⁴ See B. Lawn, *The Salernitan Questions: An Introduction to the History of Medieval and Renaissance Problem Literature* (Oxford, 1963).

⁴⁵ *The Prose Salernitan Questions: An Anonymous Collection dealing with Science and Medicine written by an Englishman c.1200, with an Appendix of ten related Collections*, ed. B. Lawn, Auctores Britannici Medii Aevi 5 (London, 1979).

⁴⁶ *Quaestiones super De animalibus* xv.19, ed. E. Filthaut, in *Opera omnia*, ed. B. Geyer, 50 vols (Aschendorff, 1951-), vol. 12, p. 271: Et tale sperma magis invenitur in feminis nigros, quae se prae omnibus aliis magis supponunt, quam albis; quia nigrae sunt calidiores, et maxime fuscae, quae sunt dulcissimae ad supponendum, ut dicunt leccatores, et quia temperatum habent os vulvae, quod suaviter amplectitur virgam.

and natural-philosophical glosses and questions in 13th and 14th mss to hunt out and read - and this has to be followed by the patient and meticulous discernment of sources. Attempts made at this stage to interpret and contextualise an incomplete dossier have to be seen as premature. Still, after we have said that, what does the dossier show so far? What questions does it raise?

First, the texts tend to have histories in two parts, on the one hand the precise context in which they arise, and then their copying, diffusion and transmission. In the first part of these histories some of the largest questions about milieu and influence are very obvious. I raise one example. There is the picture of the black which appears in the regional sections of the Latin translations of two fundamental Arabic medical works. The root of their regional-environmental picture is ultimately the Hippocratic *Airs, Waters and Places*, which concentrated on an east-west contrast, Asia and Europe, and from which blacks are missing. This text was also translated several times into Latin, but remained fairly unpopular.⁴⁷ Why did Latin Christendom show itself so much more receptive to the sharper dichotomies and the pejorative picture of the black which it found in the medical treatises, than to the Hippocratic work?

There is the second part of these histories, which I underlined earlier in this paper - if the medical texts are set within their medieval European context, their story deals with the indoctrination of a certain view of skin colour and blacks' characteristics, "scientifically" based according to the "science" of the time, into the minds of one sector of the medieval urban intelligentsia, and the (conjectured) further 'trickle-down' spread of these ideas, not only through graduate medical practitioners but also, ironically (and conjecturally), through the mass-communication preaching techniques of the mendicant friars, Dominican and Franciscan. The view taken of "medieval outlook" by many medievalists as well as non-medievalists would tend to run against what I am saying - I am referring to the view that there was a unitary medieval outlook, religious in character and profoundly unscientific. Although so enormous a question cannot be argued here, I would like to point out two things, first of all the glimpses we occasionally get of the non-religious outlook of uneducated ordinary medieval people. Medieval inquisitors were usually concerned with *very* religious people - zealots who happened to believe the wrong thing - rather than people who were casually indifferent about religion. On those few occasions when they actually bothered to interrogate people who were not Christian zealots, they turned up ordinary people whose thoughts were casually materialist - nature, not God, makes crops grow, and when you die that's the end.⁴⁸ And the reason why the mendicants used "scientific" material about men, women and nature was that these were the things that, in their experience, really interested people.⁴⁹ Recently a brilliant young historian of medieval medicine has opened up a path here, showing how medical vocabulary and ideas were conveyed to ordinary people through the use of one mendicant's preaching manual.⁵⁰ It seems that the relative mass influence on western medieval mentality of theological *and / or* "scientific" views and images of blacks is up for debate.

⁴⁷ On Latin translations, see *Hippokrates, De aeribus aquis locis*, ed. H. Grensemann (Bonn, 1996), and on transmission through Arabic texts and thought, G. Strohmaier, 'La question de l'influence du climat dans la pensée arabe et le nouveau commentaire de Galien sur le traité hippocratiques des *Airs, eaux et lieux*', in *Perspectives arabes et médiévales sur la tradition scientifique et philosophique grecque*, ed. A. Hasnawi, A. Elamrani-Jamal and M. Aouad, *Orientalia Lovanensia Analecta* 79 (Louvain and Paris, 1997), pp. 209-16.

⁴⁸ W.L. Wakefield, 'Some unorthodox popular ideas of the thirteenth century', *Medievalia et Humanistica*, n.s.4 (1973), 23-35.

⁴⁹ See the introduction to the mid-14th century Dominican resource-book on scientific curiosities, the *Responsorium curiosorum*, quoted by Biller, *Measure of Multitude*, pp. 286-7.

⁵⁰ J. Ziegler, *Medicine and Religion c.1300: The Case of Arnau de Vilanova* (Oxford, 1998), ch. 4.

Thirdly, several large developments can be discerned. A much more detailed view of the black's physical characteristics appears in the science of the mid-13th century.⁵¹ Although the chronology of the degradation of the image is elusive, it is clear that it is very marked in some early 14th century southern European medicine. Emerging and developing strongly during the mid and later 13th century and finding its culmination around 1300 is a preoccupation with the body of the black woman, in particular the quality of her milk and her inclination to sexual activity. While these are themselves material for the theme of diffusion among later medieval minds, they also raise questions about the milieu which produced them.

To what "social" and "cultural" realities should these be connected? Here my concluding remarks are going to be deliberately inconclusive. Clearly, the fragmentary evidence of literal black presence needs patient documenting. For example ... people in the northern French town of Laon around 1110 will have known what a black man looked like because the bishop employed one, while the precocious - and as yet relatively small - black African element in the slave trade in some ports, like Marseilles, will have been familiarising some southern Europeans by the mid-13th century. But the size of direct experience in different regions of Latin Christendom needs to be remembered. The Masters of the Arts faculty who were debating scientifically Jews and blacks in Paris around 1300 were doing this a few streets away from the Jews but not, to the best of our knowledge, a few streets away from communities of blacks. Different was the case in several border areas of Latin Christendom, Spain, southern Italy and Sicily, and the eastern Mediterranean, where European Christians bordered on Muslim Arabs, whose kingdoms in turn contained black Africans. The adaptation of black women's milk texts to dark women's milk suggests that with some texts the immediate context may have been the dark-skinned women of Muslim border communities, where mixed wetnursing was prohibited by canon law - though canon law which spelled out mixture not by skin colour but by faith, Christian, Muslim and Jewish.

I am going to conclude with sex, which seems to me to illustrate in miniature the features of my subject. Sexual relations were also patrolled by canon law according to faith, not according to skin colour. This is what all canon-legal texts say. However, one unique and remarkable text which suggests the possibility that canon-legal vocabulary could have been a veil. An English pastoral specialist called Thomas of Chobham discussed in his *Confessors' Summa* the Church's power to make constitutions controlling marriage. "It is not fully determined", he wrote, "how far this power extends, that is to say, whether it could constitute that there could be no marriage between a white man and a black woman" – once again, a black woman rather than black man is at issue.⁵² He was writing around 1215, within a circle of theologians at the university of Paris who were very alert to contemporary issues, and comments in Thomas's treatise usually reflect earlier or contemporary ventilation of opinion among a set of serious, reformist and very observant and interesting Paris intellectuals.⁵³ About forty years later and in Cologne in a lecture on sexual intercourse with black women,

⁵¹ Germany stands out. Germany sees remarkable production of material about blacks around 1250, in Cologne in many works from Albert the Great, and from Bartholomaeus Anglicus in eastern Germany possibly Magdeburg - Magdeburg around 1250 was the setting, we may remember, of the most remarkable depiction of a black found anywhere in the art of this period. The cluster needs pondering and perhaps has significance.

⁵² Thomas of Chobham, *Summa confessorum*, ed. F. Broomfield, *Analecta Mediaevalia Namurcensia* 25 (Louvain and Paris, 1968), p. 192: Sed non plene determinatum est quousque extendatur talis potestas ecclesie, scilicet utrum possit constituere quod matrimonium non sit inter album virum et nigram mulierem.

⁵³ On the circle, see J.W. Baldwin, *Masters, Princes and Merchants: The Social Views of Peter the Chanter and His Circle*, 2 vols (Princeton NJ, 1970); on Thomas in particular, vol. 1, pp. 34-6, and Baldwin's comments on p. 36: "Thomas's major source of inspiration was Peter the Chanter ... Thomas continued the discussion of numerous subjects originally presented by the Chanter".

Albert referred to the opinion of lechers (*leccatores*), that is to say, of an unnamed and not further specified group of men who claimed expertise, a sort of connoisseurship, about different sorts of women and the sexual pleasure they provided. Here, then, we find fragmentary survivals of two very different western European discourses about marriage and sexual relations between white men and black women, suggesting a larger reality - the fact of preoccupation with this in western male minds, and varied preoccupation with it - while we have no evidence (at least no evidence of which I am aware) of what correlated in "reality" to this fact of the mind. And that fairly represents what I have been finding so far - facts of the mind, whose later diffusion and influence is more tangible than their genesis.

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