

The materia medica in the Liber accipitrum of Grimaldus: a rich collection of simples of the early Middle Ages

An SMETS

One of the treasures of the media library François-Mitterrand of Poitiers is the manuscript 184 (288) which constitutes a collection of twelve texts of pre-Salernitan medicine, all written by the same hand:

1. f. 1-27: Galen, *De medendi methodo ad Glauconem* (books I and II)
2. f. 27-46: pseudo-Galen, *De medendi methodo ad Glauconem* (book III)
3. f. 46-54v: Aurelius, *De acutis passionibus* (based mainly on Soranus (1))
4. f. 54v-60v: Esculapius, *De morbis* (based mainly on Soranus)
5. f. 60v-67: Alexander Trallianus, *Practica* (book II) (?)
6. f. 67-67v: *De diebus aegyptiacis versus* (anonymous)
7. f. 67v-68v: *Calendarium diaeteticum* (anonymous)
8. f. 68v: *De macrocosmo et microcosmo* (anonymous)
9. f. 69-69v: *De diebus aegyptiacis* (anonymous)
10. f. 69v: *Medicamenta ad guttam* (anonymous)
11. f. 70-73v: Grimaldus, *Liber accipitrum*
12. f. 74-81v: *De passionibus quibusdam* (anonymous, based mainly on Esculapius and pseudo-Galen, book III)

It is the eleventh text of the codex, namely the *Liber accipitrum* by Grimaldus, which constitutes the object of this study, and more particularly the rich collection of medicinal substances which appear in this text. But before any study of pharmacological content, it could be useful to give some more information on the broader context of this treatise, i.e. medieval hunting (with birds) and hunting treatises of the Middle Ages.

HUNTING (WITH BIRDS) IN THE MIDDLE AGES

Throughout the Middle Ages, hunting was one of the preferred leisure of the higher social classes. The animals that hunted, i.e. dogs or raptors, were of such a value that the important lords took great care of them, and they often had a specialised personnel to do so. In order to preserve all the knowledge and the experience these men had, a whole tradition of literature of hunting, or cynegetical literature, was developed (2).

For a long time it was believed that the first hunting treatises, written in Latin, went up to the 12th century. Indeed, G. Tilander gave to his publication of three hunting treatises of this time - *Dancus rex*, *Guillelmus falconarius* and *Gerardus falconarius* - the subtitle "les plus anciens traités de fauconnerie de l'Occident (3). However, in 1984, B. Bischoff (4) surprised the specialists of the hunting history by publishing "the Anonymous of Vercelli", a treatise of falconry which can be dated from the years 924-960. Moreover, there is a second work of falconry probably former to the 12th century, namely the *Liber accipitrum* by Grimaldus, but this one had been studied little (5). Its age and its detailed recipes make it a text of great importance for the knowledge of the first stages of the hunting literature in Europe.

THE *LIBER ACCIPITRUM* OF GRIMALDUS

The treatise in question constitutes a collection of about thirty remedies to look after goshawks (*accipitres* (6)). It is thus a treatise about hunting with hawks and not one about hunting with falcons. One can indeed use various birds for hunting. Among the diurnal raptors, it is necessary to make a distinction between the family Accipitridae, the birds of low flight, and the family Falconidae, the birds of high flight (7). The sparrowhawks and the goshawks belong to the first category and were especially employed in the Germanic regions, whereas in Romance Europe one preferred the falcon.

At first sight, the recipes of the treatise of Poitiers do not follow a logical order. Some diseases are even discussed in several chapters, without there being any reference between these various quotations. The repetition of *fastidium* (chapters 1-2 and chapter 27) and of *pipitam/pituitam* (chapters 10-11 and chapters 21-22) is one of the indices that Grimaldus perhaps used various sources to compose his treatise.

Here are the names of the diseases in English, followed by the number of the chapter (or chapters) in which these ailments are treated (8): lack of appetite (1-2-27), leprosy (3), the wounded bird (4), cholera (5), fever (6), blood in the excrements (7), an excrescence or a respiratory illness (8), the weakened bird (9), phlegm (10-11-21-22), the bird that eats the feathers of the thigh (12), thirst (13), an inflammation of the head (14), the bird that is held motionless (15), the bird that it is necessary for to look after the interior (16), the food for the hawk (17), aphtous ulcers (18), a respiratory problem (19), stone (?) (20), horn (23-24), louses (25), paroxysm (26), a dietetic calendar (28), moths (29) and a last recipe without name of disease (30).

The remedies of the treatise of Grimaldus are rather elaborate, i.e. they contain a rather great number of substances. Moreover, it regularly occurs that the author proposes various solutions for the same illness, solutions that are generally interconnected by *item* (for an example of such a remedy, see annex III). Another

characteristic of this text is the frequency and the diversity of the indications of measurement, as well as with regard to the indications of weight (*coclearium*, *dragma*, *libra*, *scripulum*, *siliqua*, *uncia*), as with regard to the indications of contents (again *coclearium*, and also *sestarium* and *quartarium*). Moreover, this precise information is supplemented by measurements of comparison like "quantum caput de cultello ceperit" or "aranea domestica quantum ipsa. x. grana pensaverit". It is certainly not astonishing that especially (very) small amounts (only a few grams) dominate. In the same way, the author often indicates posology by carefully distinguishing the quantities of drug to manage the first day and the following days.

In spite of the development of the recipes, one finds only a few traces of the work of Grimaldus in posterior texts: B. van den Abeele had only noted a relationship between chapter 13 of Grimaldus and chapter 34 of the *Epistola ad Ptolomeum* (12th century) on the one hand and between chapters 1 and 3 of Grimaldus and chapters 4, 5 and 19 of the *Liber medicaminum avium* (14th century) on the other hand (9). We then noticed a link between paragraph 22.2 of Grimaldus and chapter 21 of the Anonymous of Vercelli (10th century), which was included in chapter 7 of *Gerardus falconarius* (12th century) and in chapter 19 of Albert the Great (*De animalibus*, 13th century). There are also resemblances between paragraph 2.9 of Grimaldus and chapter 45 of *Guillelmus falconarius* (12th century) as well as between paragraphs 25.2-3 of Grimaldus and paragraph 23.4 of the *Epistola ad Ptolomeum* (12th century).

On the other side, the possible sources on which Grimaldus may have based his work are not known either. Consequently, the *Liber accipitrum* is an "isolated" text, but which, precisely because of the detail of the work, probably already formed part of a well established tradition (10).

DATING AND GEOGRAPHICAL ORIGIN

According to the writing of the manuscript, this pharmaceutical codex is generally dated from the 11th century (11). However, it is not excluded that its contents is older. Indeed, the heading of the treaty - "Here begins the small work of Grimaldus, tutor and count of the sacred palace, to king Charles, on the diet and the way of raising goshawks" (12) - clearly refers to the Carolinian context.

Who can then be this mysterious Grimaldus and king Charles? In the past, several identifications were proposed (13), but generally they do not appear very convincing, except perhaps for what was suggested by L.M. de Rijk (14). As this author, we lean for an identification with Grimald, abbot of St. Gall from 841 to 870, who was the archchancellor of Louis the German and had, consequently, right to the title of *comes palatii*. Moreover, the practice of falconry is already attested in St. Gall as far as the 10th century (15). However, other elements, like prohibition with the

clergy to hunt, weaken this assumption. At this moment, it is not yet possible to identify with certainty the (supposed) author of the treatise.

On the other side, the age of the manuscript also results from its material characteristics and its contents. With regard to the material aspect, as the complete description of the codex is in annex I, we limit ourselves here to indicate those elements which could help to date the manuscript. Thus, we note that the scribe numbered the books either at the beginning or at the end. This practice becomes current from the 10th century onwards (16). In parallel, the classification of the books generally implies absence of medieval foliation. Indeed, to number the folios instead of the books becomes only current starting from the 13th century (17). On the other side, the books do not yet carry catchwords, except for the last, which was added later to the codex, whereas catchwords are present in Italy from the 10th-11th century on and in France from the 11th century (18). Then, the first line of ruling is used as a line of writing: it is only from the third decade of the 13th century on that in nonbiblical manuscripts the first line is used as framework (19). Another age index is the abbreviation of *et* by: this sign is a "ligature mérovingienne qui persistera isolée, comme aussi dans le corps et à la fin des mots, jusqu'aux dernières années du XII^e siècle" (20). Finally, in the treatise of Grimaldus, there is not yet a diacritic sign on <i>, whereas Jacques Stiennon writes that this appears towards the 11th century in the form of an oblique feature (21).

Secondly, the eleven treatises of human medicine which appear beside the text of Grimaldus in the same volume (cf. supra), date all from the pre-Salernitan period. The codex thus has a homogeneous contents. However, it is possible to divide the eleven texts into two groups. The first five texts clearly form a unit, and four of them ((two of Galen, one of Aurelius and one of Esculapius) are, in the same order, present in three other manuscripts of the 11th century (possibly beginning of the 12th century), namely Rome, BAV, Vat.lat. 4417 and 4418 and Barb.lat. 160 (22), which are all three of Italian origin (23). A comparison of a fragment of the Poitiers MS and the MSS of Rome shows that the texts present strong similarities and therefor probably belong to the same tradition (24). In Chartres, there was also a codex of French origin, which contained among others the *De medendi methodo ad Glauconem* by Galen (25).

The texts of the second part are clearly shorter. But since these texts are also of a medical nature, the rupture is not total, on the contrary. It even should be added that the MS Rome, BAV, Vat.lat. 4417 contains also the dietetic calendar and the MS Barb. 160 the text in prose on the Egyptian days (26). The MS 62 of Chartres (*olim*) also contained a *Macrocosm and microcosm*, but different from that of Poitiers (27).

The composition of the codex thus shows that it was made in a considered way. One could even go further, because the contents of the codex proves that the manuscript of Poitiers falls under a series of Latin medical treatises translated in the early Middle Ages, translations of which the origins are at Ravenna, in the 5th and 6th

centuries (28). Initially, the two books of the *De medendi methodo ad Glauconem* were translated. Then, by the 10th century, these two books of Galen are often surrounded by a third anonymous book, by the *Euporiston* of Theodorus Priscianus, by the *Liber Aureli* and the *Liber Eusculapi* (29). At the following century, the work of Theodorus Priscianus disappears from the collection and the final chapter of the treatise of Esculapius is from now on regarded as an autonomous work (30). It is clear that the MS 184 (288) of Poitiers follows this general outline. However, this graeco-latin orientation goes against the Carolinian environment which the heading of the treatise of Grimaldus seems to reveal.

The geographical origin of the manuscript thus remains dubious. The only other indication which comprises the codex is the Middle French translation of some Latin terms added to the folios 67v-68 (*reubarbe, hache, ch(i)erfueil, serpollet sauvage and betoine*). These words indicate that the codex was already in territory of expression of oil in the 15th century (31). In writing that the codex is of "provenance sans doute française" (32), E. Wickersheimer goes even further, but he does not indicate on which bases he formulates this thesis. However, looking at the presence of Mediterranean ingredients and at the dialectal traces in the language of the author, Baudouin van den Abeele also locates the origin of the text in the Franco-Italian field (33). The treatise indeed contains several Italianisms (*agrum, acitus* instead of *acidus, scortia* etc.), but also some terms of Germanic origin (*dudera, piare* and *salicinus*). The doubt concerning the origin of the treatise thus remains.

THE MATERIA MEDICA OF THE TREATISE OF GRIMALDUS

As it is indicated above, the treatise of Grimaldus introduces a rich collection of simples, used in the preparation of drugs. The most developed category is that of the plants, while the ingredients of animal origin occupy the second place. Then come the minerals and the substances which are prepared by men, generally called *preparata*. Before passing to the various categories, we would like to underline some problems of identification. For the identifications, we especially based ourselves on Pliny (34), Dioscorides (35) and the Alphabetum Galieni (36) and the work of scholars such as J. André (37), W.F. Daems (38), H. Fischer (39), D. Goltz (40), C. Opsomer (41), J. Stannard (42) and L. Van de Wiele (43), who all did research on the materia medica of the late Antiquity and the early Middle Ages.

The identification of simples: some more difficult cases

affronitrum: foam of niter (?) / potash (?)

Affronitum or *aphronit(r)um* is the transcription of the Greek term ἀφρονιτρον, which is already at Dioscorides (44), and of which the Latin equivalent is *spuma nitri*. Here this term indicates the natron or sodium carbonate (45). However, Grimaldus speaks about the combination *affronitum galline*, which is not found elsewhere and which we

thus have not been able to identify. Grimaldus uses this ingredient when the bird eats the warp ends.

calix: cap (*Arisarum vulgare* Targ.-Tozz) or dyer's alkanet (*Alkanna tinctoria* Tausch) These two possibilities are already at Pliny (XXVII, 58-59 (46)) in the form of *calyx*. The first variety, the cap, resembles to the *arum*, the second, the dyer's alkanet, to the *anchusa* (47). Grimaldus uses this plant when the bird is held motionless (*steterit*).

dudera: burnet (*Sanguisuga minor* Scop.)

Only the *Lorscher Arzneibuch* (end of the 8th century) mentions in a gloss *dudera*, a term of dubious origin, which can be regarded as a synonym of the burnet (48). The plant appears twice in the text of Grimaldus: first in a recipe against the *pituita* and then, as a substitute of *duria*, in a composition against the horn.

duria: durian (*Durio* Adans.)

The term of *duria*, mentioned in the treatise in a recipe against the horn, seems little known. Only *durio* (49) and *durianus* (50), as a synonym of *uva canina*, are mentioned in the studies. The scarcity of the term can be at the origin of the interlinear note *dudera*, but the alternative suggested here is itself of dubious identification (cf. supra).

escalenitus: species of garlic (*Allium ascalonium* L. or *Cepa ascalonia*)

It is the female form of the Greek adjective ασκαλωνιος, which indicates a species of garlic cultivated originally in Ascalon (Syria) and which already appears in the work of Pliny (51). It is probably a cultivated alternative of the *Allium ampeloprasum* L., the leek of vines or summer leek. The often mentioned translation of shallot is thus not completely correct (52). This variety of garlic is used in the treatise against the lack of appetite.

firenen: ?

This term, mentioned in a recipe against the fever, is completely unknown to us. It is certainly the name of a simple, probably of mineral origin, but even this aspect is not assured. Only a possible identification with *pyren* (of the Greek πυρην) deserves to be mentioned. This Greek term has several significations, especially of botanical order (see: **herba pilena**) but indicates in Latin a precious stone (53).

folium: sunflower (*Crozophoria tinctoria* L.)

This plant, which is of Mediterranean origin, gives a purple and red dye, the sunflower, but here it has a medical employment (54). In the work of Grimaldus, the first and the last occurrence return to the digestive system (lack of appetite and blood in the excrements), the second figures in a recipe against the fever.

herba pilena: ?

To our knowledge, Oribasius is the only one who also used this ingredient, as is shown by the MS Paris, BNF, lat. 10233 (7th century) (55). Indeed, the *Synopsis* (IX, 48) initially prescribed twice *infusa pilimata* (or *pilemata*), and then (IX, 49), *pilemata* (or *pilomata*) (56). Until now, we did not find a translation of this term.

There also exists a plant named *pillera* Endl., which comes from the Slavic province of Posega (57), but it is not at all clear if it is the same plant as the one mentioned by Grimaldus. *Pilena* could also be a transformation of *pyrena*, the accusative of the Greek *pyren*, an equivalent of *pyracantha*, scarlet fire thorn (*Pyracantha coccinea* Roemer), which is presented at Dioscorides (58). Lastly, a possible relationship with the city of Pylena in Etolia is not excluded either (59), but we lack other data on this subject. Grimaldus uses this ingredient to cure the pip.

sal lapidea: salt of the stones (?)

A glance on the authors of late Antiquity, like Pliny and Dioscorides, learns that they only use cooking salt. However, Grimaldus also mentions *sal lapidea*, a continuation which we did not meet elsewhere, and which he uses against the mouth ulcers. This *sal lapidea* could be a synonym of *sal gemmae*, which is much more frequent.

semen suricinum: broomcorn millet (*Milium effusum* L.)

In the treatise, the first mention of the adjective *suricinus*, which does not appear in the dictionaries, is in the continuation *semen suricinum*. As elsewhere in the text, the term of *semen* indicates that we are dealing with a substance of vegetable origin. The substantive corresponding to *suricinus* is thus probably *suricum*, a synonym of *surcum* or *surgum*, the broomcorn millet (60). Grimaldus uses the seeds of this plant against the pip.

spica affra: "African" ear, possibly lavender aspic (*Lavandula spica* DC ?)

The literal translation of *spica* is "cereal ear" (61). The adjective *affra* then indicates the African, or in any case exotic, origin of the plant. Here it is a white variety, the *spica affra alba*, which is employed by Grimaldus to cure the *fungus vel anelitus*, i.e. an affection of the respiratory tracts, as it is also the case in *Moamin* (an Arabic hunting treatise) (62).

Plants

Grimaldus uses 54 different plants in the composition of his drugs. The great majority of the plants was identified, even if various possibilities sometimes had to be mentioned, as it was indicated in the preceding paragraph. The example of *costus* underlines the problem once more, since the only term of *costus* does not allow to know if it is the Eastern spice, imported in Occident, in other words, the root of the *Saussurea Lappa* Clarke (63), or if it is the costmary (*Tanacetum balsamita* L.), cultivated already in the 9th century in the Occident, inter alia in St. Gall. Moreover, W.F. Daems also mentions the red spiral flag or wild marjoram, *Origanum vulgare* L. (64).

Piper is with seven occurrences the most frequent ingredient, then come *garofoli* (4 occurrences), *apium*, *costum* and *folium* (3 occurrences) and *aloe*, *betonica*, *cicer*, *cidonia*, *dudera*, *galbanum*, *mastix*, *mirra*, *stafisagria* and *thus* (2 occurrences). However, the great majority of the plants is employed only once in the treatise. For

the whole of the vegetable substances, it is important to underline three fundamental elements. First of all, much of these plants are also employed in the human pre-Salernitan medicine (65), and the medicinal use of these plants sometimes finds its origins in Antiquity. That is inter alia the case for the Roman wormwood (absinthium ponticum: *Artemisia pontica* L.), the aloe (aloe: *Aloe* sp.), the wild celery (ap(p)ium: *Apium graveolens* L.), the spiral flag or costmary (costus: *Saussurea Lappa* Clarke or *Tanacetum balsamita* L.), the cress (nasturcium: *Lepidium sativum* L. or *Nasturtium officinale* R.Br.), the willow (salix: *Salix* L.), the thyme (timinum: *Thymus vulgaris* L.) and the elm (ulmus: *Ulmus campestris* L.). Some were even regarded as true panaceas, e.g. the betony (66) (betonica: *Betonica officinalis* L.), the galbanum (galbanum: resin of the *Ferula galbaniflua* Boiss. and Buhse) and the rue (ruta: *Ruta* sp.). The base of medieval medicine is in the medical treatises of traditional Antiquity, where the men of the Middle Ages drew the names, the synonyms, the descriptions and the uses of simples. In fact, 47 plants of Grimaldus are already presented at Pliny, who, moreover, allots a medical employment to 40 of them.

In the second place, the list is characterized by a high number of "resins" or "gums": the (African) myrrh tree (bidellium: *Commiphora africana* (Arn.) Engler or *Commiphora mukul* (Hook) Engler), the "resin of Colophon" (colofonia: juice of the root of the *Convolvulus scammonia* L.), the galbanum (galbanum: *Ferula galbaniflua* Boiss. and Buhse), the ammonia drop (gutta amoniaci: *Ferula communis* L.), the asafetida giant fennel (lasar: *Ferula asa-foetida* L.), the mastic tree (mastiche : *Pistacia lentiscus* L.), the myrrh (mirra: resin of several *Commiphora*), the opopanax (opopanax: resin of the *Opopanax chironium* Koch) and the incense (thus: *Boswellia* Roxb.). Almost one substance out of five belongs to this category in the text of Grimaldus, and his pharmaceutical codex thus seems to be opposed to the other Latin treatises of falconry. Indeed, only *mastiche* and *thus* appear among the 52 vegetable substances which count at least three occurrences in the whole of these treatises (67). The gum-yielding plants are almost non-existent in the Western treatises of hunting with birds, contrary to the texts of human medicine and contrary to *Moamin* (68). The latter text contains four gum-yielding plants of Grimaldus (*mastiche*, *mirra*, *opopanax*, *thus*), among others, and paradoxically, it is him who informs against the use of the resins: "It is necessary to take care not to use medicines which are not solved in water or milk, as there are wax, oil and similar products" (69).

In the third place, Baudouin van den Abeele (70) announces, for the whole of the Latin treatises of falconry, that the majority of the products were rather easy to find by the gathering of the local plants, and that one could buy the others at the apothecary (71). However, Grimaldus employs many exotic substances, especially pepper (pip(p)er: *Piper nigrum* L.). The other imported plants are the aloe (aloe: *Aloe* sp.), the ammonia (gutta amoniaci: resin of the *Ferula communis* L.), the (African)

myrrh tree (bidellium: *Commiphora africana* (Arn.) Engler or *Commiphora mukul* (Hook) Engler), the spiral flag (costus: *Saussurea Lappa* L.)(72), the saffron (crocus: *Crocus sativus* L.), the galbanum (galbanum: resin of the *Ferula galbaniflua* Boiss. et Buhse), the cloves (gariofoli / gar(i)ofali: *Caryophyllus aromaticus* L.), the mastic tree (mastiche: *Pistacia lentiscus* L.), the myrrh (mirra: resin of several *Commiphora*), the lavender aspic (spica affra: *Lavandula spica* DC ?), the incense (thus (masculum): *Boswellia* Roxb.) and the ginger (zingiber: *Zingiber officinale* Rosc.). These exotic products show that in the 9th and 10th centuries there was still a significant spice trade, especially with India and the Moslem countries. Indeed, the trade between the East and the West never stopped, although it was practised much less during the time going from the 5th (decline of the Roman Empire) to the 10th century, than in the former and posterior centuries. Then, even during this intermediate time, Eastern spices were present in the West, as shows it inter alia the diploma of Corbie of 716, attesting that the monks of this abbey could go to seek many spices in Marseille, which were especially used to look after patients (73). Sometimes, the same product could be bought at various places, as the *bidellium* which could be gotten as well in Africa as in India (74).

Nevertheless, with regard to the origin of the vegetable substances, other observations are essential. Among the exotic products, much were already cultivated in the 9th century, as is shown by an inventory on the culture of plants (75), established from documents of the time, such as the Capitulary *De villis* and the plan of the abbey of St. Gall (76). Several plants of Grimaldus appear in the list, namely garlic (allium: *Allium sativum* L.), wild celery (ap(p)ium: *Apium graveolens* L.), betony (betonica: *Betonica officinalis* L.), coriander (coriandrum: *Coriandrum sativum* L.), costmary (costus: *Tanacetum balsamita* L.), quince tree (cidonia: *Cydonia oblonga* Mill.), fenugreek (fenum grecum: *Trigonella foenum-graecum* L.), fennelflower (git: *Nigella sativa* L. or *Nigella damascena* L.), cress (nasturcium: *Lepidium sativum* L. or *Nasturtium officinale* R.Br.), pear tree (pirus: *Pirus communis* L.) and the radish or horse-radish (raffanus: *Raphanus sativus* L. or *Raphanus raphanistrum* L.). The inventory also contains the wormwood (*absinthium*) and rue (*ruta*), but it is not certain that they are the species of the manuscript, namely the Roman wormwood (*absinthium ponticum*: *Artemisia pontica* L.) and the rue of the mountains (*ruta aggrestris*: *Ruta montana* L. or *Thalictrum flavum* L.). Other plants were still collected by the way of gathering: the Roman wormwood (*absinthium ponticum*: *Artemisia pontica* L.), the garlic (allium: *Allium sativum* L.), the wild celery (ap(p)ium: *Apium graveolens* L.), the Dutchman's-pipe (aristolochia: *Aristolochia* L.), the betony (betonica: *Betonica officinalis* L.), the coriander (coriandrum : *Coriandrum sativum* L.), the quince tree (cidonia: *Cydonia oblonga* Mill.), the fenugreek (fenum grecum: *Trigonella foenum-graecum* L.), the male fern (herba felix : *Dryopteris filix mas.* (L.) Schott), the lupine (lupinus: *Lupinus*

albus L.), the common yarrow (*militaris*: *Achillea millefolium* L.), the cress (nasturcium: *Lepidium sativum* L. or *Nasturtium officinale* R.Br.), the opopanax (opopanax: resin of the *Opopanax chironium* Koch), the radish or horse-radish (raffanus: *Raphanus sativus* L. or *Raphanus raphanistrum* L.), the rue (*ruta aggrestris*: *Ruta montana* L. or *Thalictrum flavum* L.), the willow (*salicinus*: *Salix* L.) and the lousewort (*stafisagria*: *Delphinium staphisagria* L.).

However, some reservations can be expressed in connection with these enumerations (importation, culture and collecting). First of all, certain plants belong to more than one category and it is thus not possible to indicate the exact origin of all the plants of the manuscript. The studies do not always mention from what time there are testimonies on the culture of the plants which were imported before. Even the recourse to a dated list, like that of C.C. Mathon (77), does not solve all the problems, as the case of *costus* proves it. Conversely, for lack of sufficient data, other plants do not appear in any list.

Lastly, Baudouin van den Abeele noticed rightly that it is necessary to take into account the geographical differences inside Europe (78). If pepper is an Eastern product which must be imported in all the European countries, other plants, like the lavender, grow naturally in Mediterranean Europe but must be imported in Central and Northern Europe.

These problems are not easy to solve for a text which presents very few precise and descriptive data on plants. The only indication which the author provides is the mention of some products which can replace unknown substances, or ingredients which are too expensive or too rare: e.g. the grape (*uva* for *botrus*) or the common yarrow (*militaris*) for the dyer's alkanet (*anagallicus*). According to Jerry Stannard, the absence of descriptive data is explained in two ways (79). First, with regard to the exotic substances, the author could simply not have information. Then, other plants, especially those which had nutritive or therapeutic uses, were so well known that it was not necessary to provide detailed descriptions (80). The treatise of Grimaldus thus contains very diverse plants, exotic substances as well as local products, crop plants which are mentioned beside the wild plants, plants known and used in ancient medicine next to more "recent" simples. The great majority of the plants (39 out of 54) intervening only once, the four folios of the treatise of Grimaldus give a detailed list of the plants which were used in the veterinary medicine of the Middle Ages.

Animal and mineral substances

With 18 different terms (13 animals and 5 animal products, namely grease, flesh, wool, bacon and egg), the animal substances are much fewer than the plants, since for each animal substance the treatise presents three vegetable substances. However, if one looks at the number of occurrences, this variation decreases considerably:

44 occurrences for the animals against 80 for plants, or, in other words, to a ratio of one to three on the level of the variety, it is opposed a ratio of more than one to two on the level of the occurrences. As recalled by Baudouin van den Abeele, the treatises of falconry generally use a great number of simples of animal origin, in any case much more than the treatises of human medicine, the falcons being carnivores (81). Indeed, the text contains several times the indication that it is necessary to apply the drug to a piece of meat, before giving it to the raptor. If it is the flesh of a well defined animal, the number of ingredients of different animal origin is automatically increased. But Grimaldus indicates on several occasions that it is necessary to give the drug *carne qua fuerit* ("with meat"), without specifying the nature of this meat. The animals can be divided into various groups. Thus, the text contains four birds: the pigeon (columba - columbus: *Columba livia aberratio domestica* L.), the corbel (corbus: *Corvus corax* L.), the sparrow (passer domesticus: *Passer domesticus* L.) and the chick (pullus: the young of the *Gallus gallus* L.); four domestic quadrupeds: the she-ass (asina: *Equus asinus* L.), the ox (bos: *Bos taurus* L.), the goat (caprinus: *Capra hircus* L.) and the pig (porcinus: *Sus scrofa domesticus* or *f. ferus* L.); two aquatic animals: the minnows (pisces variones: *Phoxinus phoxinus* L.) and the cuttlefish (sepia: *Sepia officinalis* L.), and then some animals which do not really belong to one of these categories: the spider (aranea domestica: *Araneus diadematus* Clerck), the stag (cervinus: *Cervus elaphus* L.) and the mouse (sorex: *Mus musculus* L.).

Except for the minnow and the cuttlefish, all the substances were also employed in human pre-Salernitan medicine. As for the plants, the treatise of Grimaldus resorts to ingredients which were already used in ancient medicine. Indeed, 16 of the 18 animal ingredients mentioned in the text of Grimaldus are already in the *Naturalis historia* of Pliny (82). If, compared to the plants, some elements were probably more difficult to find, such as for example the marrow of the stag, the majority of the animals were raised by peasants or monks (83) or lived in the open.

The category of minerals is composed only of 10 simples. Except for salt (three times *sal* and once *sal lapidea*), the ingredients of mineral origin arise only once in the treatise. The identification of certain elements remains dubious (cf. supra), even if we are dealing, here also, with ingredients of which the medical use rather often goes up to Antiquity.

Preparata

The *preparata*, or products prepared by men, are especially the aromatizing ones and the products used as excipients to manage remedies or as binders. The list contains nine different ingredients, but it is possible to establish an additional division between honey and wild honey (*mel* and *mel silvaticum*) and another between oil, oil of roses and Hispanic oil (*oleum*, *oleum rosae* and *oleum spanum*), which gives us a list of

twelve elements. The *preparata* are characterised by the high number of their occurrences. The most frequent element is the honey which figure 17 times in the treatise (84); it is also the most current substance, all categories confused. Then comes the wine, which is employed 16 times by Grimaldus. The third place is occupied by the oil with 4 occurrences. The lye and the oil of roses count 3 occurrences and the vinegar, butter and Hispanic oil two. There remains only the wax, the wild honey, the hydromel (*mulsa*) and the soap which appear only once in the treatise. With their 54 occurrences, the *preparata* quantitatively occupy the second place, in front of the animals which add up, with 18 different elements, 44 occurrences.

The frequent use of the *preparata* in the treatise of Grimaldus does not have anything exceptional however. Indeed, in her *Index*, C. Opsomer always gives all the references of simples, except for the five most frequent lemmas (85). These are *aqua*, *acetum*, *mel*, *oleum* and *vinum*; which, for four of them, are *preparata*. In addition, *mel* and *vinum* are the most current ingredients of the treatise. The other *preparata* are also present in the *Index* and a lot of them already appeared at Pliny (86). In fact, these products were easy to find and were present in almost each kitchen, antique or medieval.

The table reproduces the number of ingredients and occurrences for each category, as well as all the substances which arise more than three times in the text.

	<i>Number of simples</i>	<i>Occurrences</i>	<i>Occurrences > 3</i>
<i>Plants</i>	54	80	piper (7) garofoli (4)
<i>Animals</i>	18	44	caro (15) pullus (4)
<i>Minerals</i>	11 (10) (87)	13	sal (4)
<i>Preparata</i>	12 (9)	54	mel (17) vinum (16) oleum (4)
Total	95 (91)	191	8 substances 71 occurrences

The treatise of Grimaldus, which is relatively short (4 folios), thus contains a great number of elements of the *materia medica*. Indeed, it mentions not less than 91 different simples. Only 8 ingredients (out of 91) appear more than 3 times in the text and only 4 more than 4 times. Since these 8 simples represent themselves more than

a third of all the occurrences of the *materia medica*, it is clear that the 83 other substances are repeated very little in the text. Indeed, on the 91 ingredients, 60 are reproduced only once in the treatise. A so large variety in only a few folios underlines all the interest of the text of Grimaldus. On other levels, like the denomination of the diseases, the study of the language of the manuscript or the identification of the author, to quote only some examples, the pharmaceutical codex of Grimaldus deserves the attention of the scholar and the reader, but we reserve these stories for another occasion...

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ANNEX I: CODICOLOGICAL DESCRIPTION OF THE MS POITIERS, MÉDIATHÈQUE FRANÇOIS-MITTERRAND, 184 (288)

Description: Parchment; 81 ff; 198 x 132 mm; 11 books numbered by the scribe; probably end 11th century.

Owners: The former owners did not leave any traces, but thanks to the Middle French translation of some Latin terms written on the folios 67v-68, we know that the codex was already in territory of expression of oil in the XVth century. The library of Poitiers preserves this codex at least since 1868.

Bibliography: Baader (G.), "Die Anfänge der medizinischen Ausbildung im Abendland bis 1100", in *La scuola nell'Occidente latino dell'alto medioevo* II, Spoleto, 1972, p. 669-716; Beccaria, (A.), *I codici di medicina del periodo presalernitano (secoli IX, X e XI)*, Rome, 1956, p. 181-183; *Catalogue général des manuscrits des bibliothèques publiques de France. Départements - tome XXV. Poitiers - Valenciennes*, Paris, 1894, p. 54-55; Fleury (P. de), "Inventaire analytique et descriptif de manuscrits de la bibliothèque de Poitiers", *Mémoires de la Société des Antiquaires de l'Ouest*, 32, 1^{re} partie, 1867, p. 131-215; Thorndike (L.) - Kibre (P.), *A Catalogue of Incipits of mediaeval scientific writings in Latin*, London, 1963, col. 1440; van den Abeele (B.), *La fauconnerie au Moyen Âge. Connaissance, affaitage et médecine des oiseaux de chasse d'après les traités latins*, Paris, 1994, p. 21; Wickersheimer (E.), *Les manuscrits latins de médecine du haut moyen âge dans les bibliothèques de France*, Paris, 1966, p. 147-154.

ANNEX II: TABLE OF CONTENTS

- | | |
|--------------------------------------|---|
| 1. fastidium | 16. si intus volueris curare |
| 2. fastidium, indigestionem | 17. ad nutriendum ut sit fortis et musculosus |
| 3. lepra | 18. ad vissica que in ore nascitur |
| 4. quia sugillatus est | 19. si accipiter anxiosus fuerit |
| 5. colera | 20. ad lapidem in accipitrem congregatum |
| 6. febrem | 21. ad pituitam |
| 7. quando sanguine assellatur | 22. ad pituitam |
| 8. fungum vel anelitem | 23. ad cornum |
| 9. quando defectus est | 24. ad tranquillandum cornum |
| 10. si pipitam in naravilem habuerit | 25. si peduculos habuerit |
| 11. si pipitam laricoriam habuerit | 26. si gransum habuerit |
| 12. si sibi pinam de coxa commederit | 27. si fastidium habuerit |
| 13. si accipiter siticulosus fuerit | 28. [dietetic calendar] |
| 14. venientem de agro curare | 29. si tiniolas habuerit |
| 15. si accipiter steterit | 30. recipe... |

ANNEX III: EXAMPLE OF A RECIPE (CHAPTER 9)

(1) *Cum videris accipitrem defectum esse cum se excusserit de alis suis et tarde se cludit, iam debes scire quia defectus est.* (2) *Cui curabis facere ad confortationem: da ei lexivam coclearia .III., semen gitti siliquas (88) .III., botrus \uuva/ siliquas .II., mel coclearia .II., albumen ovi .I.* (3) *Totum in unum inmiscis et dabis accipitri offas .VII. carne qua fuerit.* (4) *Item, lasar scripula .III., stafisagria grana .II., aranea domestica quantum ipsa .X. grana stafisagria pensaverit, et omnia inmiscis, tundis et percutit, adepina facta, ei per nares ambas sufflas et admodum adhibes.* (5) *De ipso pulvere palatum ei fricas et acetum acerrimum eius naribus semel in die adicies et dies .XX. ab omnibus non adexetur.*

(1) If you see that the goshawk is weakened because he beats his wings and has problems to close them, you must know that he is exhausted. (2) You will look after it by doing this for his confort: give him 3 spoonfuls of lye, 3 siliques of seed of nigella, 2 siliques of grape, 2 spoonfuls of honey, the white of 1 egg. (3) You mixture everything and you will give it to him, 7 mouthfuls with meat. (4) In the same way, 3 scruples of laser, 2 grains of lousewort, as many spiders as these same 10 grains of lousewort weigh and you mixture, crush and cut (?) all; and after it became fatty (?), you breath it by his nostrils and you apply it fully. (5) You rub of this same powder to his palate and you will put very strong vinegar in his nostrils once a day and he absolutely may eat nothing during 20 days (?).

ACKNOWLEDGMENTS

We started our research on the *Liber accipitrum* by writing a Masterthesis on this subject (*Le traité d'autourserie de Grimaldus. Ms. 184 (288) de la Bibliothèque municipale de Poitiers*), which we presented at the Université de Poitiers (France). We would like to thank Dr. Laurence Moulinier and Prof. Dr. Martin Aurell for all their help during this period. Other persons also contributed to the different versions of this text: Dr. Baudouin van den Abeele, Prof. Dr. Robert Halleux and Ms. Maria Frederikson. Finally, Mr. Sven Stuer accepted to correct the English version of this contribution. That they all may find here the expression of my gratitude.

In the meantime, the masterthesis, with the edition of the text, has been published: *Le "Liber accipitrum" de Grimaldus: un traité d'autourserie du haut Moyen Âge. Texte édité, traduit et annoté par An Smets*, Nogent-le-Roi, 1999. A former version of this article appeared in *Médiévales*, 36 (1999), p. 145-157.

NOTES

1. See K.-D. Fischer, "Sorani im MA", in *Lexikon des Mittelalters*, München - Zürich, 1995, t. VII, col. 2055.
2. For a complete review of the hunting literature, see B. van den Abeele, *La littérature cynégétique*, Turnhout, 1996 (Typologie de sources du moyen âge occidental, 75).
3. G. Tilander (ed), *Dancus rex, Guillelmus Falconarius, Gerardus Falconarius: Les plus anciens traités de fauconnerie de l'Occident*, Lund, 1963 (Cynegetica, IX).
4. B. Bischoff, "Die älteste europäische Falkenmedizin (Mitte des zehnten Jahrhunderts)", in *Anecdota Novissima*, Stuttgart, 1984, p. 171-182.
5. Baudouin van den Abeele is the only scholar who studied this text before we did. Voir B. van den Abeele, *Les traités de fauconnerie latins du Moyen Âge (Thèse de doctorat)*, 4 vol., Université catholique de Louvain, Faculté de philosophie et lettres, 1990-1991. A part of his results has been published in Id., *La fauconnerie au Moyen Âge. Connaissance, affaitage et médecine des oiseaux de chasse d'après les traités latins*, Paris, 1994 (Sapience, 10). Moreover, in *La fauconnerie au Moyen Âge. op. cit.*, p. 21, he pronounces his astonishment that this text has been studied so little, despite of the fact that it is mentioned in several studies (cf. annex I: bibliography).
6. Even if the term *accipiter* nowadays indicates the goshawk, one has to underline that it got different significations during the Middle Ages, depending on the centuries and the regions (from "raptor bird" during the classical Antiquity to "goshawk" or "sparrowhawk" in the work of Frederic II, the *De arte venandi cum avibus*, and in the posterior treatises). For more detailed information on the evolution of this term, see B. van den Abeele, *La fauconnerie au Moyen Âge, op. cit.*, p. 75-79.
7. The distinction between birds of low flight and those of high flight is clearly explained by J.O. Benoist, "La chasse au vol. Techniques de chasse et valeur symbolique de la volerie", in *Chasse au Moyen Âge: actes du colloque de Nice (22 - 24 juin 1979)*", p. 117-118. It goes up to the medieval time.
8. The Latin treatise does not have a table of contents, but starting from the initials in the text, it is possible to divide the treatise in 29 sections, plus a section 30 which has been noted afterwards. The reconstruction of this table, which is based on B. van den Abeele, *Les traités de fauconnerie latins du Moyen Âge, op. cit.*, t. II, p. 131, is mentioned in annex II.
9. B. van den Abeele, *Les traités de fauconnerie, op. cit.*, t. II, p. 132.
10. B. van den Abeele, *Les traités de fauconnerie, op. cit.*, t. II, p. 132.

11. The writing, a Carolinian minuscule, can be dated from (the end of) the 11th century, even if the opinions vary between the 10th and the 12th century. L.M. De Rijk, "On the Curriculum of the Arts of the Trivium at St. Gall from c. 850 - c. 1000", in *Vivarium. A journal of mediaeval philosophy and the intellectual life of the Middle Ages*, I, Assen, 1963, p. 63, situates the manuscript in the 10th century, while the *Catalogue général des manuscrits des bibliothèques publiques de France. Départements - tome XXV. Poitiers - Valenciennes*, Paris, 1894, p. 55, hesitates between the 10th and the 11th century. E. Wickersheimer, *Les manuscrits latins de médecine du haut moyen âge dans les bibliothèques de France*, Paris, 1966, p. 147 and B. van den Abeele, *Les traités de fauconnerie, op. cit.*, t. I, p. 55 opt for the 11th century. On the other side, B. Bischoff, *loc. cit.*, p. 172, writes that the MS goes up to 1100, and maybe even later, and he adds in a note that the MS is wrongly classified in the 11th century. In the 19th century, P. de Fleury, "Inventaire analytique et descriptif de manuscrits de la bibliothèque de Poitiers", *Mémoires de la Société des Antiquaires de l'Ouest*, 32, 1^{re} partie, 1867, p. 131-215, also situated the MS in the 12th century.
12. Here follows the Latin text: *Incipit opusculum Grimaldus baiuli et comitis sacri palatii ad Karulum regem de dieta ciborum et nutritura ancipitrum.*
13. For a review of the different possibilities, see B. van den Abeele, *Les traités de fauconnerie, op. cit.*, t. II, p. 128-129.
14. L.M. De Rijk, *loc. cit.*, p. 36.
15. For more information on this subject, see P. Lüps - R. Althaus, "Fragmente zur Geschichte der Beizjagd in der Schweiz", in *Jahrbuch des Deutschen Falkenordens* (1997), p. 24-38.
16. J. Vezin, "La réalisation matérielle des manuscrits latins pendant le Haut Moyen Âge", in *Codicologica 2, Eléments pour une codicologie comparée*, Leiden, 1978, p. 35.
17. M. Prou, *Manuel de paléographie latine et française du VI^e au XVII^e siècle suivi d'un dictionnaire des abréviations avec 23 fac-similés en phototypie*, Paris, 1892², p. 179.
18. J. Vezin, *loc. cit.*, p. 35-36.
19. J. Vezin, *loc. cit.*, p. 34.
20. M. Prou, *op. cit.*, p. 89.
21. J. Stiennon, *Paléographie du moyen âge*, Paris, 1973, p. 134.
22. G. Baader, "Die Anfänge der medizinischen Ausbildung im Abendland bis 1100", in *La scuola nell'Occidente latino dell'alto medioevo II*, Spoleto, 1972, p. 695-696.
23. G. Baader, *loc. cit.*, p. 716.
24. This comparison was made by M. Frederiksson, who is making a PhD on the text of Esculapius. We would like to thank her to share some results of her work in progress.
25. It is the MS 62 of the old collection of Chartres, which disappeared after a fire caused by an airraid on May 26th 1944. For the text of Galen, E. Wickersheimer mentions a relationship between this codex and the MS of Poitiers. See E. Wickersheimer, "Textes médicaux chartreux des IX^e, X^e et XI^e siècles", in E.A. Underwood (ed.), *Science, medicine and history. Essays on the evolution of scientific thought and medical practice written in honour of Charles Singer*, t. I, Oxford, 1953, p. 167.
26. A. Beccaria, *I codici di medicina del periodo presalernitano (secoli IX, X e XI)*, Rome, 1956, p. 208 and p. 329-330.
27. For a comment on these figures, see E. Wickersheimer, "Figures médico-astrologiques des IX^e, X^e et XI^e siècles", in *Janus*, XIX (1914), p. 157-177. The tables are discussed at the p. 158-159, the reproduction of the figure of Poitiers is on p. 161, that of Chartres on p. 162.
28. G. Baader, *loc. cit.*, p. 676.
29. N. Palmieri, "Un antico commento a Galeno della scuola medica di Ravenna", in *Physis* 23, 2 (1981), p. 223-224. One of the codexes which belong to this series is the MS Vendôme, BM 109, which contains the *De medendi methodo ad Glauconem* of Galen and the *Euporiston* of Theodorus Priscianus, among others. See E. Wickersheimer, *op. cit.*, p. 176-181.
30. G. Baader, *loc. cit.*, p. 696-697.
31. According to the FEW, t. IX, p. 524, the term *serpollet* does not appear before the 15th century. We thus follow the datation suggested by E. Wickersheimer, *op. cit.*, p. 147, and not that of A. Beccaria, *op. cit.*, p. 182, who situates these terms already in the 13th century.
32. E. Wickersheimer, *op. cit.*, p. 147.
33. B. van den Abeele, *Les traités de fauconnerie, op. cit.*, t. II, p. 130.

34. J. André (ed), *Pline l'Ancien, Histoire naturelle, livre XV*, Paris, 1960; Id. (ed), *Pline l'Ancien, Histoire naturelle, livre XIX*, Paris, 1964; A. Ernout (ed), *Pline l'Ancien, Histoire naturelle, livre XXVII*, Paris, 1959 and G. Serbat (ed), *Pline l'Ancien, Histoire naturelle, livre XXXI*, Paris, 1972.
35. M. Wellmann (ed), *Pedanius Dioscuridis Anazarbei, De materia medica libri quinque*, 3 vol., Berlin, 1958.
36. *Galeno adscripto libri*, in *Galeni opera*, Venise, 1562, t. VI, f. 88-101v.
37. Jacques André, *Lexique des termes de botanique en latin*, Paris, 1956 (Etudes et commentaires 23) and *Les noms des plantes dans la Rome antique*, Paris, 1985 (Collection d'études anciennes).
38. W.F. Daems, *Nomina simplicium medicinarum ex synonymariis medii aevi collecta, Semantische Untersuchungen zum Fachwortschatz hoch- und spätmittelalterlicher Drogenkunde*, Leiden-New York-Köln, 1993.
39. H. Fischer, *Mittelalterliche Pflanzenkunde*, München, 1929, reprint Hildesheim, 1967.
40. D. Goltz, *Studien zur Geschichte der Mineralnamen in Pharmazie, Chemie und Medizin von den Anfängen bis Paracelsus*, Wiesbaden, 1972 (Sudhoffs Archiv, Beihefte 14).
41. C. Halleux-Opsomer, "Un herbier médicinal du haut moyen âge: l'Alphabetum Galieni", in *History and Philosophy of the Life Sciences*, 4, 1 (1982), p. 85-97 and C. Opsomer, *Index de la pharmacopée du Ier au Xe siècle*, 2 vol., Hildesheim-Zürich-New York, 1989 (Lexica - Indizes - Konkordanzen zur klassischen Philologie, CV).
42. J. Stannard, "Greco-Roman Materia medica in Medieval Germany", in *Bulletin of the History of Medicine*, 46 (1972), p. 455-468 and "Botanical Data and Late Mediaeval 'Rezeptliteratur'", in G. Keil (ed.), *Fachprosa-Studien. Beiträge zur mittelalterlichen Wissenschaft- und Geistesgeschichte*, Berlin, 1982, p. 371-395.
43. L. Van de Wiele (ed.), *Een middel nederlandse versie van de Circa Instans van Platearius naar de hss Portland, British Museum MS Loan 29/332 (XIVe eeuw) en Universiteitsbibliotheek te Gent Hs. 1457, Oudenaarde*, 1970.
44. 113, 1: αφοζ δε ντρον. Voir M. Wellmann (ed), *op. cit.*, t. III, p. 83.
45. G. Serbat (ed.), *op. cit.*, p. 175. See also D. Goltz, *op. cit.*, p. 166 and C. Halleux-Opsomer, *loc. cit.*, p. 87.
46. A. Ernout (ed), *op. cit.*, p. 40.
47. Voir J. André, *Les noms de plantes, op. cit.*, p. 46.
48. U. Stoll (ed), *Das "Lorscher Arzneibuch" - ein medizinisches Kompendium des 8. Jahrhunderts (Codex Bambergensis medicinalis I). Text, Übersetzung und Fachglossar*, Stuttgart, 1991 (Sudhoffs Archiv, Beiheft 28), p. 76, 428, 441.
49. See, among others, A.-G. Haudricourt - L. Hedin, *L'homme et les plantes cultivées*, Paris, 1987, p. 167.
50. W.F. Daems, *op. cit.*, p. 248.
51. Pline, XIX, 102. Cf. J. André (ed), *Pline l'Ancien, livre XIX, op. cit.*, p. 62.
52. J. André, *Lexique des termes, op. cit.*, p. 28, 41.
53. F. Gaffiot, *Dictionnaire illustré latin-français*, Paris, 1934, p. 1283.
54. B. Guineau - J. Vezin, "Recettes et couleurs de l'Antiquité et du Moyen Âge", in *Comprendre et maîtriser la nature au Moyen Âge. Mélanges d'histoire des sciences offerts à Guy Beaujouan*, Genève, 1994, p. 244-245.
55. C. Opsomer, *op. cit.*, p. 579.
56. Cf. Bussemaker - Ch. Daremberg (ed), *Oeuvres d'Oribase, texte grec, en grande partie inédit, collationné sur les manuscrits, traduit pour la première fois en français, avec une introduction, des notes, des tables et des planches*, Paris, 1876, t. VI, p. 367-368 et 371.
57. G.C. Wittstein, *Etymologisch-botanisches Handwörterbuch*, Schaan, Lichtenstein, 1982, p. 693.
58. Dioscoride I; 93, in M. Wellmann (ed), *op. cit.*, t. I, p. 85. See also J. André, *Lexique des termes, op. cit.*, p. 265-266 and C. Opsomer, *op. cit.*, p. 632.
59. F. Gaffiot, *op. cit.*, Paris, 1934, p. 1283.
60. J.F. Niermeyer, *Mediae latinitatis lexicon minus*, Leyde, 1976, p. 1009.
61. J. André, *Lexique des termes, op. cit.*, p. 299.
62. M.-D. Glessgen, *Die Falkenheilkunde im Spiegel ihrer volgarizzamenti. Studien zur Romania Arabica*, Tübingen, 1996 (Beihefte zur Zeitschrift für romanische Philologie, 269-270), t. II, p. 826-827.

63. C. Halleux-Opsomer, *loc. cit.*, p. 89.
64. W.F. Daems, *op. cit.*, p. 218.
65. Thanks to the *Index de la pharmacopée* of Carmélia Opsomer, it is rather easy to verify the presence of simples in the medical treatises of the late Antiquity and the early Middle Ages. See C. Opsomer, *Index, op. cit.*
66. There exists a Latin treatise, *De herba vettonica*, which praises all the magical and curative virtues of the betony and which is generally attributed to Antonius Musa, medecin of the emperor Augustus. However, P. Fournier, *Le livre des plantes médicinales et vénéneuses de France*, Paris, 1947-1948, I, p. 217, notes that the texte is "de date vraisemblablement bien postérieure".
67. B. van den Abeele, *La fauconnerie au Moyen Âge, op. cit.*, p. 222.
68. B. van den Abeele, *La fauconnerie au Moyen Âge, op. cit.*, p. 256.
69. Moamin II, chapitre I, 14. English translation based on the French version by B. van den Abeele, *La fauconnerie au Moyen Âge, op. cit.*, p. 256.
70. B. van den Abeele, *La fauconnerie au Moyen Âge, op. cit.*, p. 224.
71. This remark concerns all the Latin treatises, i.e. the texts written between the 10th and the 15th century. But at the time of Grimaldus, apothecaries did exist, even if they were less frequent than in the posterior centuries. Cf. J. Stannard, "Greco-Roman Materia medica", *loc. cit.*, p. 458-459 and p. 464.
72. Exception made for the cultivated variety.
73. Cf. J. Lestocquoy, "Epices, médecine et abbayes", dans *Etudes mérovingiennes: Actes des Journées de Poitiers, 1^{er} - 3 mai 1952*, Paris, 1953, p. 180-181.
An easy summary of the products which were imported in the Western world can be found in W. Heyd, *Histoire du commerce du Levant au Moyen-Âge*, supplément I, Amsterdam, 1959², p. 555-711; as naturel products, the plants are mentioned on the pages 563-576. More recent information can be found in M. Postan - E. E. Rich (ed.), *The Cambridge Economic History of Europe*, vol. II: *Trade and industry in the Middle Ages*, Cambridge, 1952; J.M. Riddle, "On the Introduction and the Use of Eastern Drugs in the Early Middle Ages", in *Sudhoffs Archiv*, 49 (1965), p. 185-198 and R.I. Curtis, *Garum et Salsamenta. Production and Commerce in Materia Medica*, Leiden-New York-Köln, 1991 (Studies in ancien medicine 3).
74. Platearius, *Le livre des simples médecines, d'après le manuscrit français 12322 de la Bibliothèque Nationale de Paris, Traduction et adaptation de Ghislaine Maladin, Etude codicologique de François Avril. Commentaire historique, botanique et médical de Pierre Lieutaghi, Glossaire botanique et médical de Ghislaine Maladin et Pierre Lieutaghi*, Paris, 1986.
75. See C.-C. Mathon, *Les plantes cultivées au IX^{ème} siècle*, Poitiers, 1985 (Ecologie et biogéographie, série poitevine).
76. However, it could be useful to remind that it is only a plan, "Entwurf", and that we do not know if this plan corresponded to the medieval reality. By the same way, the enumeration of plants in the capitulary *De villis* does not mention the plants which were cultivated, but the plants one could find on the royal territories.
77. C.-C. Mathon, *op. cit.*, p. 3.
78. B. van den Abeele, *La fauconnerie au Moyen Âge, op. cit.*, p. 225.
79. J. Stannard, "Botanical Data", *loc. cit.*, p. 373.
80. Some examples: the celery, the pipper, the radish, the cress. A more developed list is mentioned by J. Stannard, "Botanical Data", *loc. cit.*, p. 392.
81. B. van den Abeele, *La fauconnerie au Moyen Âge, op. cit.*, p. 223.
82. O. Schneider, *op. cit.* The number is again smaller for the contemporary treatises. The antidotary of Glasgow counts 10 animal substances which also appear in the text of Grimaldus and the antidory of St. Gall 6. The others hardly mention any animal ingredient: the antidotary of Bamberg mentions 4 of them, those of London and Reichenau 3, the one of Cambridge 2 and the last one, of Berlin, only 1.
83. The big monasteries, like St. Gall, did not only possess an *herbularius* (garden with medical plants), but also had place and buildings for animals and the people who looked after them. See W. Horn - E. Born, *The plan of St. Gall: A study of the architecture and economy of, and life in a paradigmatic Carolingian monastery*, t. II, Berkeley, 1979, p. 264.

84. In fact, *mel* appears 18 times in the text, but it is once accompanied by the adjective *timinum*, and this occurrence is mentioned among the plants (thyme).
85. C. Opsomer, *Index, op. cit.*, p. LXXVII.
86. O. Schneider, *op. cit.* However, *oleum spanum* does not appear separately in the work of Pliny, but it is more an indication of origin than an indication of variety. Besides, Pliny knew very well that the olive tree also grew in Spain (XV, 1), but he considered the Italian oil as the best of the world: "principatum in hoc (= *oleo*) quoque bono obtinuit Italia e toto orbe". See J. André (ed), *Pline l'Ancien, livre XV, op. cit.*, p. 20, 22.
Unlike the precedings categories, where the correspondances between the substances of Grimaldus and those of Pliny were much bigger than between the ingredients of Grimaldus and those of the antidotaries of the early Middle Ages, there is not such a gap on the level of the *preparata*.
87. The difference between those two numbers is explained by the taking into account, or not, of the different varieties of salt, honey and oil.
88. *giliquas* corrected to *siliqua*.

SUMMARY

The codex 184 (288) of the médiathèque François-Mitterrand of Poitiers contains more than ten medical texts, all of the pre-Salernitan period. On the folios 7-74v figures the *Liber accipitrum* of a certain Grimaldus, a collection of recipes to cure sick or wounded hawks. As falcons, these birds of prey were used during the very popular medieval hunting parties, so the health of the birds became one of the main concerns of their owners.

Little is known about the origin of the codex or of this treatise. The manuscript is generally dated to the end of the 11th century, but the hunting treatise might be older, and there is no certitude about the so-called author Grimaldus.

The main value of the texts lays in its rich collection of *materia medica* or medical substances mentioned in the recipes. Indeed, even if the text is not longer than four folios, it contains more than 90 different ingredients. This means that the recipes in the *Liber accipitrum* are rather complicated, because they generally consist of numerous ingredients. Compared to other falconry treatises, this seems to be one of the main features of the text of Grimaldus.

SAMENVATTING

Het handschrift 184 (288) van de médiathèque François-Mitterrand van Poitiers bevat meer dan tien medische teksten, die allen uit de presalernitaanse periode stammen. Op de folios 70-74v staat de *Liber accipitrum* van een zekere Grimaldus, een verzameling recepten om zieke of gewonde haviken te behandelen. Net zoals valken werden deze roofvogels in de middeleeuwen gebruikt tijdens de populaire jachtpartijen en de gezondheid van deze dieren vormde dan ook een hoofdbekommernis voor de eigenaars.

Er is weinig geweten over de oorsprong van het handschrift of van het traktaat. Meestal wordt het handgeschrift gesitueerd tegen het einde van de 11de eeuw, maar het jachtraktaat is mogelijk nog ouder en over de auteur, de zogenaamde Grimaldus, is evenmin veel geweten.

Het grote belang van de tekst ligt in de *materia medica* of medische substanties die vermeld worden in de recepten. Inderdaad, zelfs al is de tekst niet langer dan vier folios, toch bevat hij meer dan 90 verschillende ingrediënten. Dit betekent dat de recepten in de *Liber accipitrum* tamelijk ingewikkeld zijn, omdat ze meestal uit verschillende componenten bestaan. In vergelijking met de andere valkerijtraktaten lijkt dit één van de belangrijkste kenmerken van de tekst van Grimaldus te zijn.

RÉSUMÉ

Le manuscrit 184 (288) de la médiathèque François-Mitterrand de Poitiers contient plus de dix textes médicaux, qui datent tous de la période présalernitaine. Aux folios 70-74v il se trouve le *Liber accipitrum* d'un certain Grimaldus, une collection de recettes pour soigner des autours malades ou blessés. Comme les faucons, ces oiseaux rapaces étaient utilisés au moyen âge lors des parties de chasse et la santé des oiseaux était un souci majeur pour les propriétaires.

Rien - ou peu - n'est connu sur l'origine du manuscrit et du traité. Le manuscrit est généralement daté vers la fin du XI^e siècle, mais le traité en question peut être plus ancien, et nous ne savons pas beaucoup sur Grimaldus, son (soi-disant?) auteur.

L'importance principale du traité réside dans la *materia medica* ou les substances médicales qui sont mentionnées dans les recettes. En effet, même si le texte ne comporte pas plus de 4 folios, il contient plus de 90 ingrédients différents. Cela signifie que les recettes dans le *Liber accipitrum* sont assez compliquées, parce qu'elles comptent généralement plusieurs substances. Une comparaison avec les autres traités de fauconnerie apprend que cela est une des caractéristiques principales du traité de Grimaldus.