

Traditional Uses of the African *Millettia* species (Fabaceae)

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Abstract: This study aimed to constitute a complete and cross-checked listing of the medicinal African *Millettia* species and of their uses. Indeed, the genus *Millettia* has an important place in the pharmacopoeias of sub-Saharan Africa, with numerous therapeutic indications, such as antitumoral, anti-inflammatory, antiviral, bactericidal, insecticidal and pest-destroying. The multiplicity of these activities, well known in traditional medicine, is being confirmed by pharmacological studies in laboratory and confers on this genus an interest as great in traditional medicine as in phytochemical research of active compounds. In this study, we begin by giving the distribution by country of the 139 African *Millettia* and presenting the threatened species, to continue with an overall presentation of all the traditional uses we could gather for the 51 medicinal African *Millettia*. The desire of the CERMA is to make this information available for the traditional practitioners and all the persons involved in the valorization of the traditional therapeutic know-how.

Key words: *Millettia*, Africa, medicinal plants, ethnomedicine, ethnobotany

INTRODUCTION

The genus *Millettia* appears in the African pharmacopeia since centuries. It has a wide range of biological activities such as antitumoral, anti-inflammatory, antiviral, bactericidal, insecticidal and pest-destroying. The multiplicity of these activities, beginning to be confirmed by pharmacological studies in laboratory, confers on this genus a great interest in traditional medicine as well as in the research of new biologically active compounds. The confirmation of the traditional pharmacological activities must be systematized, with reproducible procedures, in order to validate the traditional herbal formulations. The development of increasingly pointed techniques for pharmacological studies can help to widen the therapeutic spectrum of *Millettia*. Indeed, this genus deserves to be studied because 20% of its approximately 260 species, divided mainly between Africa (139 species) and Asia (121 species), are medicinal. The various species are sometimes difficult to recognize by the local populations (Aubreville, 1950). It even happens that the same vernacular name applies to 2 or 3 distinct botanical

species. Despite this fact, the genus *Millettia* remain of a great importance in the traditional therapeutic arsenal. Nevertheless, the overexploitation of the biotopes is causing a rarefaction of certain species. In this article, we gathered the traditional uses of *Millettia* of Africa as well as information related to the validation of these pharmacological activities in laboratory. We wanted in a first time to make the information available for traditional practitioners (tradipractitioners) and persons involved in the valorization of traditional medicine. We hoped therefore to contribute to the improvement of herbal drugs and to promote the access to treatments of quality for the populations. It is indeed the goal of the CERMA (Centre d'Etudes et de Recherches Médecins d'Afrique).

MATERIALS AND METHODS

Study area: The study was conducted from 2005 to 2007. Present study area covers the major part of sub-saharian Africa, in which *Millettia* species can be found. Since our local correspondents, the tradipracticians of the network of Médecins d'Afrique (Doctors of Africa), are located mainly in the Guineo-Congolian botanical area, they could

help us in this area to investigate for the traditional uses of the local *Millettia*. The data concerning the other areas were obtained through literature.

Data collection

Literature review: We began present study by a literature review, in order to collect of all *Millettia* species described in Africa. The validity of the names and synonyms was carefully checked, in the herbaria of the Museum of Natural History of Paris and of the Institute of Botany of Montpellier and through four databases: International Plant Name Index (<http://www.ipni.org>), W3Tropicos (<http://www.mobot.org>), African Flowering Plants Database (<http://www.ville-ge.ch/cjb/bd/africa/>) and ILLDIS (<http://www.ildis.org>) and since some difficulties of identification apparently occur between *Millettia* and related genera, we give in the results the description of the *Millettia* genus and some taxonomic considerations. Among the *Millettia* species we could list, we checked, thanks to a review of many relevant books and ethnobotanical articles, which of them had one or more medicinal indication and as often as the information was available, which part of the plant was active. Since we have begun a systematic collection and assay of all African *Millettia*, we listed also all the local names of these plants, to help us in our interviews with traditional healers. Moreover, we thought important to indicate in the results which species are in endangered, either because of overexploitation or because of a degradation of their biotope.

Field investigation: In the Guineo-Congolian Area, thanks to our network of tradipracticitioners, we were able to check the literature data by interviewing the traditional healers. The interviews were semi-structured: in the first place, using the local names, descriptions and images of the *Millettia* species, we asked them (directly or through the tradipracticitioners of our network) which of the species they knew. In the second place, we used a questionnaire to collect, for each known species, information concerning its medicinal uses, its collection and storage, the preparation, application and dosage of the remedies and whether or not the plant had grown harder to find in the past ten years.

Plant material: For this study, we did not collect plant material for each medicinal *Millettia* species. This collection will be carried out botanical area after botanical area in order to screen them for the different pathologies in the treatment of which the *Millettia* species are used.

RESULTS AND DISCUSSION

We constituted a carefully checked listing of all African *Millettia* species, with a complete synonymy and the local names when they were available, which is of utmost importance to speak with tradipracticitioners and get useful information. With this listing, we have investigated country by country, which *Millettia* species had medicinal properties, which part(s) of the plant was or were used and on which ailments and diseases they were used. We could also check whether these medicinal properties had been validated in laboratory.

Taxonomic considerations and repartition in Africa

Description of the genus: Most African *Millettia* are trees (49%) or shrubs, climbing (38%) or not climbing (13%) (Lock, 1989). The leaves are imparipennates, with whole leaflets, usually opposites, with stipellae and a pulvinus at the base of the rachis. The inflorescence is paniculate or pseudo-racemose. The flowers are generally longer than 1 cm, with a violet, pink, blue or white corolla silky or glabrous outside. The calyx is campanulate and the standard ovate or suborbicular. The wings are sometimes attached to the keel-petals, which are obtuse. Stamens are usually adherent, the filament of the vexillary stamen being free at the base but adherent to the others in its middle. All the anthers are alike, ovate and dorsifixed. The disc between the stamens is annular or lobed, or sometimes undeveloped. The ovary is pubescent, sessile or nearly so, with 3 or more ovules. The pod is coriaceous, leathery or woody, dehiscent in two valves. It is often flat, more rarely subcylindrical with two or more seeds. The seeds are orbicular or kidney-shaped, with a ring-like aril, yellow or white, clasping the funicle. They are well separated from one another, but their disposition in the pod can vary.

Distribution of the genus and habitat: *Millettia* can be found in nearly every country of sub-saharian Africa (Fig. 1) but 60% of the species grow only in the guineo-congolian area (A), with 52 species in D.R. Congo, 27 in Gabon and 20 in Cameroon. East Africa accounts for approximately 24% of the African *Millettia* with 25 species in Tanzania. The distribution area of *Millettia* covers 3 of the 8 regional centres of endemism described by White (1983) in continental Africa: Guineo-Congolian area (A), Somalia-Masaï Area (B), Zambesian Area (C) and also Madagascar (D). The higher endemism rate is observed in the Malagasy area (100%), followed by the Somalia/Masaï Area (75% in Ethiopia), the Guineo-Congolian area (63% in D.R. Congo, 41% in Gabon) and in

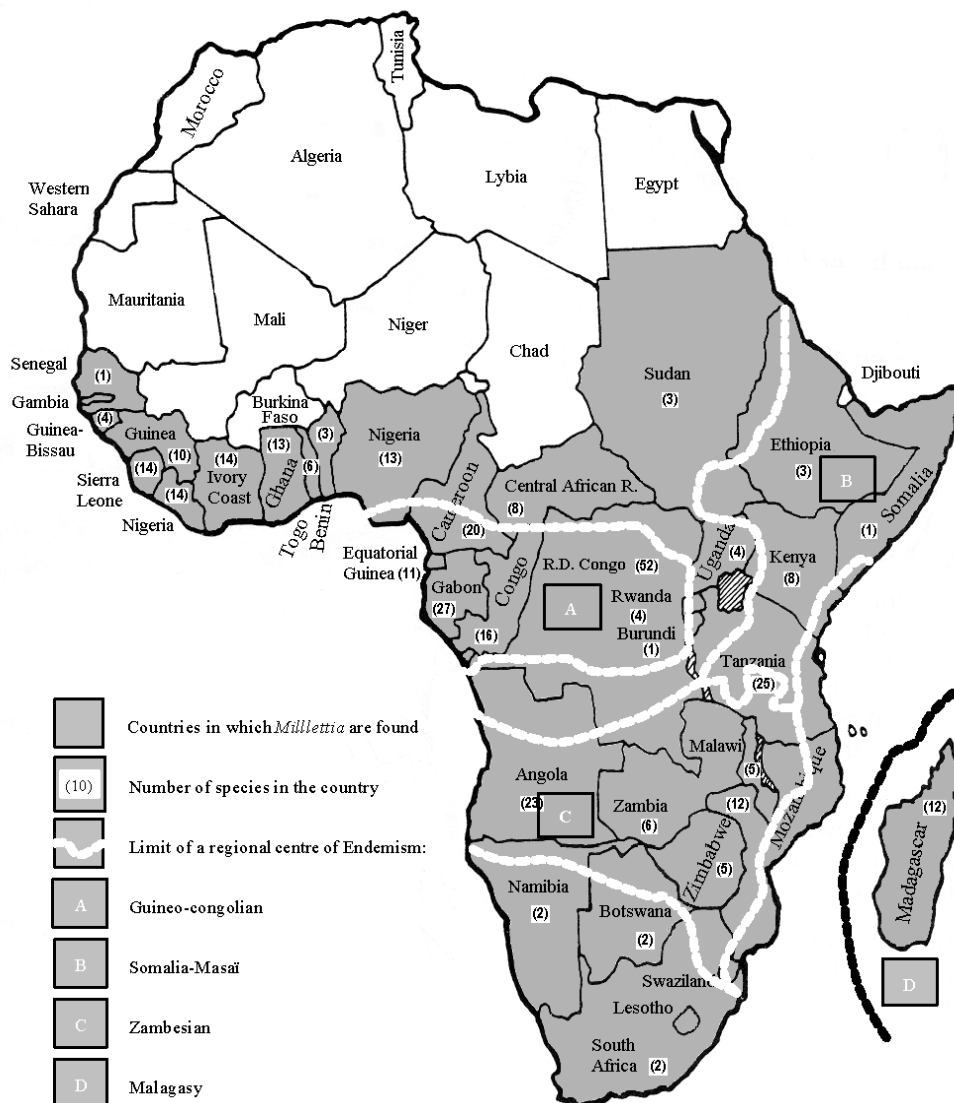


Fig. 1: Distribution map of the African *Millettia*

third position the Zambesian area (44% in Tanzania). Most *Millettia* species grow in forests (80%) or in woodland (8%), bushland (7%) and shrubland (5%). These vegetation types are those described by White (1983).

Taxonomic considerations: The genus *Millettia* belongs to the tribe *Millettieae*, described by Geesink in 1981 from *Tephrosia* s.l. In addition to *Millettia*, *Millettieae* includes for Africa the genera *Aganope* (4 species), *Craibia* (14 species), *Dalbergiella* (3 species), *Derris* (5 species), *Dewevrea* (2 species), *Leptoderris*

(26 species), *Lonchocarpus* (21 species), *Mundulea* (1 species), *Ostryocarpus* (2 species), *Platysepalum* (12 species), *Pongamia* (1 species), *Ptychlobium* (6 species), *Requienia* (3 species), *Schefflerodendron* (4 species), *Tephrosia* (218 species), *Xeroderris* (1 species) (Lock, 1989). Among these genera, many appear in the synonymy of the *Millettia* species and certain species first attributed to one genus passed to another, which does not help the stepping of information concerning their distribution and use. Thus, several African medicinal species classified initially in the genus *Millettia* currently belong to other genera like

Lonchocarpus (*Lonchocarpus sericeus* H.B. et K.) or *Mundulea* (*Mundulea chapelieri* (Baill.) R.Vig. ex Du Puy et Labat.). Conversely, among the medicinal *Millettia* that we retained in this article, several passed from the *Lonchocarpus* to the *Millettia* genus (*Millettia barteri* (Benth.) Dunn, *Millettia eetveldeana* (Micheli) Hauman, *Millettia goossensii* (Hauman) Polhill, *Millettia lucens* (Scott Elliot) Dunn). Hu *et al.* (2000) reconstructed the phylogenetic relationships in the tribe *Millettieae* from chloroplast AND sequences and concluded to the validity of a core *Millettieae* clade, comprising 4 genera, *Millettia*, *Lonchocarpus*, *Derris* and *Tephrosia*. Through their study, it appears that several characters, such as the accumulation of nonprotein amino acids, the presence of a pseudoraceme or a pseudopanicule are with rare exceptions the mark of the tribe *Millettieae*. Conversely, other criteria as the dehiscence of pods allow separations within *Millettieae*. Thus, *Andira*, *Xeroderris* and *Lonchocarpus* resemble much *Millettia* for which they could be mistaken had they not indehiscent pods whereas *Millettia* has dehiscent pods. It is therefore necessary to have the pods to allow a good identification of the specimens of *Millettia* collected in Africa.

Threatened species and conservation measures: Among the 139 *Millettia* species described for Africa, 55 are not threatened at all, 13 are vulnerable, 6 are endangered and

the vulnerability of the 67 remaining species (almost half of the species) is not well known (IUCN, 2007). The vulnerable and threatened *Millettia* species are listed in Table 1. Among *Millettia* endangered or vulnerable, 4 are used as medicinal (*M. conraui*, *M. elongatistyla*, *M. laurentii* and *M. warneckeii*) and 3 are exploited for wood (*M. elongatistyla*, *M. laurentii* and *M. sacleuxii*). Considering the kind of threats and the cultivation methods existing in Africa, endemic species present in only one country can be regarded as vulnerable and must be studied to determine if they require conservation measures. It is the case in particular of *Millettia* in Madagascar and in the coastal forests, very opened to exploitation.

Ethnobotanical uses in Africa

Uses in general: *Millettia* is a multi-purposes genus. We listed eight major uses, the relative proportions of which we calculated on the 139 species described for Africa:

- Fodder production (2%, ex: *M. dura*, *M. thonningii*)
- Flowers attracting bees (3%, ex: *M. rhodantha*, *M. theuszii*, *M. pallens*)
- Decorative plants (4%, ex: *M. elongatistyla*, *M. grandis*, planted in the gardens in South Africa, *M. ferruginea*, planted along the roads in Ethiopia, like *M. thonningii* in Ghana).

Table 1: Listing of vulnerable or threatened African *Millettia* species

Botanical name	Distribution	Vulnerability	Kind of threat and conservation measures
<i>Millettia aurea</i> (R. Vig.) Du Puy et Labat	Madagascar (endemic)	Threatened	Destruction of the wood by agriculture and burning and the recent cotton plantations. (Included within Ankarafantsika Reserve)
<i>Millettia hitsika</i> Du Puy et Labat	Madagascar (endemic)	Threatened	Regression of the habitat (coastal forest) and of the population.
<i>Millettia laurentii</i> De Wild.	Cameroon, Congo, D.R. Congo, Equatorial Guinea, Gabon, Centrafrican Republic, Rwanda	Threatened	Over exploitation for its decorative timber and degradation of the habitat. (Protected in DRC by decree n°038/2003 of march 6, 2003 (mining rules)
<i>Millettia nathaliae</i> Du Puy et Labat	Madagascar (endemic)	Threatened	Only 2 localities, degradation of the habitat and regression of the population. (Included within Ankarana and Analamerana Reserves)
<i>Millettia orientalis</i> Du Puy et Labat	Madagascar (endemic)	Threatened	Only 2 localities, degradation of the habitat and regression of the population, the southern being threatened by mining.
<i>Millettia taolanaroensis</i> Du Puy et Labat	Madagascar (endemic)	Threatened	Only 1 locality, degradation of the habitat and regression of the population, threatened by mining and exploitation
<i>Millettia bussei</i> Harms	Mozambique, Tanzania	Vulnerable	Decline of the habitat (dry coastal forest), few localities
<i>Millettia capuronii</i> Du Puy et N.Labat	Madagascar (endemic)	Vulnerable	Only 3 localities, reduced population, destruction of the habitat
<i>Millettia conraui</i> Harms	Cameroon, Nigeria	Vulnerable	Destruction of the forest by agriculture, exploitation, clear cutting
<i>Millettia elongatistyla</i> J.B. Gillett	Tanzania (endemic)	Vulnerable	Only 2 localities, deforestation, reduced population (Forest reserve of Kimboza protected by forest guards)
<i>Millettia eriocarpa</i> Dunn	Tanzania (endemic)	Vulnerable	Destruction of the dry coastal forest
<i>Millettia lacus-alberti</i> J.B. Gillett	Congo, Uganda	Vulnerable	Reduced population and threatened habitat
<i>Millettia macrophylla</i> Benth.	Cameroon, Congo, Equatorial Guinea, Nigeria	Vulnerable	Destruction of the forest by agriculture, exploitation, clear cutting
<i>Millettia micans</i> Taubert	Tanzania (endemic)	Vulnerable	Degradation of the habitat
<i>Millettia sacleuxii</i> Dunn	Tanzania (endemic)	Vulnerable	Reduced population, in regression
<i>Millettia schlieberii</i> Harms	Tanzania (endemic)	Vulnerable	Reduced population, in regression
<i>Millettia semsei</i> J.B. Gillett	Tanzania (endemic)	Vulnerable	Reduced population, in regression
<i>Millettia sericantha</i> Harms	Tanzania (endemic)	Vulnerable	Only 2 localities, reduced population, in regression
<i>Millettia warneckeii</i> Harms	Ivory Coast, Gabon, Ghana, Guinea, Liberia, Sierra Leone, Togo	Vulnerable	Degradation of the habitat (agriculture, cutting, fire, invasive alien species)

- Agroforestry, improvement of the soil, natural fences (5%: *M. aurea*, *M. ferruginea*, *M. grandis*, *M. laurentii*, *M. thonningii*, *M. zechiana*)
- Production of fibres (5%, ex: *M. barteri*, *M. comosa*, *M. comosa* var. *vermoesenii*, *M. irvinei*)
- Fishing or hunting poisons (5%, ex: *M. dura*, *M. ferruginea* subsp. *darassana*, *M. versicolor*, *M. barteri*, *M. taolanaroensis*)
- Timber, construction (17%, ex: *M. dura*, *M. elongatistyla*, *M. hitsika*, *M. versicolor*, *M. drastica*, *M. grandis*, *M. lane-poolei*, *M. laurentii*, *M. macroua*, *M. oblata*, *M. pallens*, *M. rhodantha*, *M. sacleuxii*, *M. stuhlmannii*, *M. taolanaroensis*, *M. thonningii*, *M. usaramensis* ssp. *usaramensis*)
- Medicinal plants (59%, with 51 species)

These data show clearly that *Millettia* are mainly used for their wood and in the traditional pharmacopeias. Their interest in agroforestry lies in particular in the fact that, being Fabaceae, they fix atmospheric nitrogen and consequently improve the soil fertility, which permits to increase the yields of crops (Hailu *et al.*, 2000; Egbe *et al.*, 1998). Moreover, their rustic nature and their fast growth allow to cultivate them easily. They appreciate a fresh, well drained soil, in a sunny place and do not require complicated pruning (Cheers, 1999). It is the case for example of *Millettia grandis* that one can cultivate starting from fresh seeds and that grows of 0.8 to 1 m each year when it is placed under appropriated conditions (Joffe, 1993). This species is traditionally used as wind-breaks and can be planted along the grazing grounds as shelter for the animals or natural fence. Beside these uses, some species such as *M. thonningii* may have potential for human alimentation. The seed is promising both for its oil and for its protein content (Ezeagu and Gowda, 2006).

Medicinal uses: More than 60% of *Millettia* species were integrated in the pharmacopeias in almost all the countries, except Madagascar, Gabon, R.D. Congo, Angola, Tanzania, Uganda, Zambia, for which the percentages vary from 17 to 50%. Sparsed populations, restricted habitat for certain species, in particular the endemic ones, difficulties of access because most *Millettia* grow in woods and confusions of species (attribution to only one species of the properties of several, known under the same local name) can explain these small percentages. These data enable us to conclude to the great medicinal interest of this genus. It appears thus necessary to undertake systematic chemical and pharmacological studies of the genus *Millettia*. The traditional medicinal uses of African *Millettia* are

recorded in Table 2. For each species, we give in turn the botanical name and the synonyms and we also give some local names when we know them. They come from the tradipractitioners or from the relevant literature. Only some of the local names are proposed not to weigh down the table. The traditional recipes are classified according to the plant parts used. Some *Millettia* known in the African traditional pharmacopeias are not included in the table for lack of data about their uses: *M. chrysophylla*, *M. comosa*, *M. conraui*, *M. dinklagei*, *M. goossensii*, *M. hypolampra*, *M. leonensis*, *M. lucens*, *M. peguensis*, *M. pilosa*.

As it is the rule in African traditional medicine, roots (31%), trunk barks (28%) and leaves (26%) are the three mostly used plant parts. The preparations are also in conformity with what is usually practised in the African tradition, with a preponderance of decoctions (43%), followed by macerations (26%) which are done primarily with water and incidentally in alcohol. For certain *Millettia* species the fresh parts of the plant are expressed to get the juice, used directly. Lastly, a typically African preparation is the calcination, carried out to obtain a powder which will be use in scarifications. On 39 species of *Millettia* which medicinal or chemical use is well documented, approximately 1/3 presents only one therapeutic indication, 1/3 from 2 to 6 and the remaining 1/3 more than 6 (15 for *M. laurentii*, 17 for *M. sanagana* and 18 for *M. barteri*). A broad range of therapeutic targets is in conformity with what can be generally observed. On the other hand, the species presenting only one indication are interesting a priori in term of screening: one can think that they are rather specific plants, especially if this specificity is common to several countries. Our field investigations in progress will enable us to check country by country, starting from already collected informations, the threatened species, the knowledge of the biotopes by the tradipractitioners and certain points of convergence and divergence in the use of *Millettia*.

As far as we know, in the African pharmacopeias, the genus *Millettia* presents nearly 150 distinct therapeutic indications, covering many important pathologies such as intestinal parasitoses, hernias, stomachic and intestinal pains, regulation of the cycles for the women, feverish pains, odontology in general, wounds, bronchopulmonary affections, coughs and colds, headaches. They also are very often indicated like purgative, diuretic or laxative and are frequently used as fishing or hunting poison.

Among the 51 African medicinal *Millettia*, 20 have been studied in laboratory but the validation of some of the traditional indications have been carried out only for the 10 following species:

Table 2: Recapitulative table of the traditional uses of medicinal and toxic African *Millettia*

Species	Local name	Part used and recipe	References
<i>Millettia aboensis</i> (Hook.f.) Baker = <i>Millettia macrophylla</i> var. <i>aboensis</i> Hook. f.	Nigeria: awo, erurumesi, ukperurumwesi (edo), odudu (efik), mkpukpu marya, ogba otolo (igbo), ofoni (ijo-izon)	Leaves: Chewed and rubbed on the painful spots in case of respiratory difficulties (Nigeria). The sap of the leaves is drunk to treat the constipation of the children (Benin). A decoction of the twigs is given to the constipated babies and to children as laxative. Leaves and fruits are used in case of colds or headaches. Roots: Macerated in alcohol to treat the hernias; mixed with egg, oil and slices of plantain banana, they are used to treat the jaundice, 3 days for a man, 4 days for a woman (Nigeria). Twigs: Used as chewing sticks.	(Burkill, 1995; Hutchinson and Dalziel, 1958; Iwu, 1993; Keay, 1989; Lock, 1989)
<i>Millettia angustidentata</i> De Wild. = <i>Millettia inaequalise-pala</i> Hauman	Tanzania: Lutuha (kitongwe) RD Congo: Kiondo (katinga), musumbi (kipanga)	Leaves: Decoction drunk in case of blemorrhoea.	(Lock, 1989; Gillett <i>et al.</i> , 1971; Staner and Boutique, 1937)
<i>Millettia aromatica</i> Dunn	Angola: Ka seke, ka sekwa (kimbundu)	Trunk: The trunk cerns are ground to powder and used to treat the headaches (nervous and rheumatic). They are often mixed with kaolin powder (pemba).	(Bossard, 1996; Lock, 1989)
<i>Millettia barteri</i> (Benth.) Dunn = <i>Lonchocarpus barteri</i> Benth., <i>Lonchocarpus heudelotianus</i> Baill., <i>Millettia calabarica</i> Dunn., <i>Millettia demousei</i> Wildem., <i>Millettia gentilii</i> De Wild., <i>Millettia wrophylla</i> Welw. ex Baker	Congo: Ngongo (laadi), lumba (bekwil), molumba (bongili), DRC: Okokosi (lingala) Ivory coast: Bubelé (kru-guere) Gabon: Otukula (mpongwè) Centrafrican Republic: Poto-nganda (aka) Guinea-Bissau: Nambô (mandingue) Sierra-Leone: Asewuri (loko), ndaujo, (mende), labo, ka-tol (temne),	Whole plant: Fishing poison, the stems are crushed (Sierra Leone, Ghana and Gabon) or cut in small pieces (Congo) and thrown in the river. In DRC, a maceration of bark is used and in Nigeria a maceration of the leaves. Twigs: Crushed and macerated, used into purgative and rectal injection or emetic (Gabon). Stem bark: In herb tea and bath to calm insane (Congo), ground into sniffing powder to treat migraine and sinusitis (Ivory Coast, Nigeria). The juice of fresh barks scrapings is employed in instillations to treat eyes diseases (DRC). The bark extract is also drunk or applied in pomade in the treatment of feverish aches, cough, dysmenorrhoea (Ivory Coast). Root bark: Bark root decoction drunk in case of cardiac pains (Congo). Leaves: Cooked in water, they are reputed anthelmintic (DRC). For leucorrhoea and vaginal disorders, small balls of young leaves are formed and deposited in the vagina. The leaf pulp is used to hasten the maturation of abscesses and to rub the painful zones in case of pulmonary pains, bronchitis, feverish aches (Congo). Leaves sap: Instilled in the eyes in case of filarirose, with the addition of Costus afer to treat eye ache. Against otitis, sap is put in the ears and in case of teethache; it is put on the tooth (Congo).	(Ake Assi, 2001; Bep, 1986; Bouquet, 1969; Bouquet and Debray, 1974; Burkill, 1995; Brunel, 1984; Hutchinson and Dalziel, 1958; Irvine, 1961; Lock, 1989; Neuwinger, 2000; Quattrochi, 2000; Raponda-Walker and Sillans, 1961; Staner and Boutique, 1937)
<i>Millettia bicolor</i> Dunn	Congo: Mvuka (vili), movuta, kivutu (laadi), luvuka (beembe), kutunga (bongili)	Leaves: They are put to soften on the fire and then 1-2 drops are expressed in every eye to kill filaires, in ears (otitis) or on teeth (teethache). With young leaves, ovules are prepared for leucorrhoea and other vaginal diseases: once in place, the ovule is kept one day and renewed every day up to healing. A leaves paste is used to make abscesses mature, to rub the painful zones in case of bronchopneumonias or of feverish aches. Roots: Decoction (1 spoon each day) against heart aches.	(Bouquet, 1969; Lock, 1989)
<i>Millettia congolensis</i> de Wild. et Th. Dur. = <i>Millettia macroura</i> Harms	Congo: Ntubungu (laadi), mudibuku (lumbu) DRC: Bofote, losongo (lokundu), bokonge (lingala), ifololo, boliki-bo-lokele (turumbu), fundi, kifundi, musanga, mobato, lokololi	Leaves: They are put to soften on the fire and then 1-2 drops are expressed in every eye to kill filaires, in ears (otitis) or on teeth (teethache). With young leaves, ovules are prepared for leucorrhoea and other vaginal diseases: once in place, the ovule is kept one day and renewed every day up to healing. A leaves paste is used to make abscesses mature, to rub the painful zones in case of bronchopneumonias or of feverish aches. Seeds and leaves: Treat viral diseases and fevers. Roots: Decoction (1 spoon each day) against heart aches.	(Bouquet, 1969; Iwu, 1993; Soulimov <i>et al.</i> , 1975)
<i>Millettia conraui</i> Harms	Cameroon: Fa (bamileke)	Stem barks: Used in Cameroon in the treatment of internal parasites and colic in children and infertility, amenorrhea, menopausal disorders	(Tchinda <i>et al.</i> , 2007; Burkill, 1995; Hutchinson and Dalziel, 1958; Keay, 1989; Lock, 1989)
<i>Millettia drastica</i> Baker = <i>Phaseolodes drasticum</i> (Baker) Kuntze, <i>Millettia drasticoideis</i> De Wild., <i>Millettia giorgii</i>	Congo: Mbwenge, mubwenge (laadi), bongo (babinga) DR Congo: Agwogo,	Whole plant: Considered as a drastic purgative in Gabon Barks: In feet bath to treat cracks and to dislodge <i>ntunga</i> . To tranquilize madmen, they are given to drink an extract of pulverized bark. Side effects: vomiting and tiredness. (Congo, Centrafrican Republic); infertility (Cameroon)	(Terashima and Ishikawa, 2003; Bossard, 1996; Bouquet, 1969; Bouquet and Debray, 1974; Burkill, 1995; Hutchinson and Dalziel, 1958; Mandango <i>et al.</i> , 1990)

Table 2: Continued

Species	Local name	Part used and recipe	References
De Wild., <i>Millettia rubra</i>	dondolonda, lebenge	Roots: Juice inhaled to treat headache and sinusitis (Congo). Powder root used as aphrodisiac	Keay, 1989; Lock, 1989; Neuwinger, 2000; Staner and Boutique, 1937)
De Wild., <i>Millettia seretii</i>	(yambata), alinge	Seeds: Crushed and used as vulnerary for wounds (DRC), cooked and taken as drastic purgative in Angola.	
De Wild.	(ikwangula), bili-tolo (kitselenge), kodia-kodia, lemba-nza, sala (luki), megwaba (mobwasa), monzembu (basankusu), musenene, selemenzi (kiluba), siu-siu (kiza), ifololo (turumbu), kakuntandjow (kisongola), nyangwe (kasongo), amalusia (teturi)	Part not specified: Treatment of diabetes (DRC).	
<i>Millettia duchesnei</i> De Wild.	Angola: Ki tenda, tala kafele Tanganika: Kasonswe	DRC: Boliki bo lokele (turumbu)	
<i>Millettia dura</i> Dunn	Kenya: Muhatia (kikuyu), mwongwa (kisii), mwanga (meru)	Bark: Juice of fresh bark used in instillations to treat ocular pains (DRC)	(Lock, 1989; Staner and Boutique, 1937)
= <i>Millettia drastica</i> sensu Eggeling et Dale,		Roots and Leaves: Used to treat hernias, diarrheas and also the painful menstruations (Tanzania)	(Gillett <i>et al.</i> , 1971; Lock, 1989; Yamada, 1999)
<i>Millettia cyanantha</i> Dunn.,	DR Congo: Mushunguti, (kihavu, mashi, nyindu), mutate (kihunde), cungurhi (shi)	Seeds: Ground as vulnerary (Congo)	
<i>Millettia ferruginea</i> sensu Dawe,	Tanzania: Mvukwi		
<i>Millettia oblata</i> sensu Battiscombe,	Uganda: Kiragara (runyankore)		
<i>Millettia drasticoidea</i> sensu Burt Davy <i>et al.</i>	Rwanda: Muyogoro (bururi), mhavi(pori)		
<i>Millettia eetveldeana</i> (Micheli) Hauman	Congo: Kissambala, oye-mpono (teke), mubwenge (laadi)	Trunk bark: Decoction or aqueous maceration to treat stiff neck and epilepsy. Macerated bark is laxative. Against the stiff neck, one drinks a glass of macerated bark of branches three times per day. To treat epilepsy, a handle of bark of root or trunk is put to boil with a kaolin pinch in one half-litre of water. It is necessary to drink half a glass three times per day (Congo).	(Adjanooun <i>et al.</i> , 1988; Bouquet, 1969; Gillett <i>et al.</i> , 1971; Lock, 1989; Neuwinger, 2000; Terashima and Ishikawa, 2003)
= <i>Lonchocarpus eetveldeanus</i> Micheli, <i>Millettia</i> sp.	DR Congo: Motambele (kiyaka), bamenga (azande), bumbala (kitalinga), bofwete, bonkola-ndjembu (lokundu), huti (kikusu), ifolo-li-fufow (turumbu), kapopa (kilua), mongboo (kibutu), pehe (tshiluba), wate (tshitetela), kileme (teturi)	Roots sap: Used in massage to treat feverish aches, general tiredness (Congo)	
Eggeling et Dale, <i>Millettia leptocarpa</i> Dunn		Leaves: The leaves decoction is used in steam bath against feverish aches, general tiredness (Congo)	
<i>Millettia elongatistyla</i> Gillett	Tanzania: Mhavi (kihehe), mkungu (kimbunga), mkungugu (kimbunga)	Root: Root decoction is diuretic. It can be used against schistosomiasis and malaria (Tanzania)	(Gillett <i>et al.</i> , 1971; Haerdi, 1964; Lock, 1989; Neuwinger, 2000)
<i>Millettia elskensii</i> De Wild.	DRC: Munuvuta (laadi), boliki bo lokele (turumbu), longhandju (yangambi), luwamba (kirega)	Leaves: Sap of leaves used in complement of bark decoction in the treatment of malaria (Tanzania).	
= <i>Millettia yangambiensis</i> De Wild., <i>Millettia elskensii</i> var. <i>quadriuga</i> de Wild.		Leaves: Used as soap or crushed with maniguette leaves against lumbar pains, sap used as vulnerary.	(Bouquet, 1969; Lock, 1989; Staner and Boutique, 1937)
		Pods: Reduced in ashes, they are used as remedies for bronchitis in scarifications (DRC). The plant is used in the event of intestinal parasitoses (DRC)	

Table 2: Continued

Species	Local name	Part used and recipe	References
<i>Milletia ferruginea</i> (Hochst.) Baker et ses deux sous-espèces: <i>M. ferruginea</i> subsp. <i>darassana</i> (Cuf.) J.B. Gillett <i>M. ferruginea</i> subsp. <i>ferruginea</i>	Ethiopia: birbira (amarinya), sotallo, kotalu (galinya), enghediksho (sidama), sari (galinya arussi), zaghia (wollamo), yego (galinya harar)	Bark and mature fruit: Ground to powder and spread at the surface of water as fishing poison. Fruit: for the treatment of pain, application of fruit paste mixed with some butter and for amibiase, fruit powder mixed with honey is given orally. Leaves: Sap expressed for the treatment of earache and in case of bacterial infection of nails, they are bandaged with a paste of leaves. Seed: Insecticidal properties	(Thulin, 1983; Muzeyi and Jembere, 2005; Bep, 1986; Teklehaymanot and Giday, 2007)
<i>Milletia gagnepainiana</i> Dunn = <i>Milletia comosa</i> (Micheli) <i>Hauman</i> var. <i>comosa</i> (uncertain synonymy)	Gabon: Fi-ndzic, (fang), dibali-di-nyoga (bavungu), mbumba-nyoga (bapunu), bumba-pélé (mitsogo, bavové), libali-la-tari (bavili, banzabi), lisogo-la-tari (mindumu), orémbo (mpongwè)	Stems: The stems decoction is used in gargarism against tooth aches	(Lock, 1989; Neuwinger, 2000; Raponda-Walker and Sillans, 1961)
<i>Milletia grandis</i> (E. Meyer) Skeels = <i>Milletia caffra</i> Meissner, <i>Milletia sutherlandii</i> , <i>Virgilia grandis</i> E. Mey.	South Africa: UmZimbeet, omsambeet, umSimbithi, umKunye (Xhosa), umSimbithi, umSimbithwa (Zulu)	Seeds: Poisonous if they are eaten in great quantity, but they can be useful as vermifuge crushed and soaked in milk (quantity: 1 to 2 seeds) Roots: Ground to powder as tranquillizer (Zulu); crushed with an equal quantity of Croton roots, with 1 share of lion grease, 1 share of python grease and some ground bone of lion. To produce a sleeping pill, the roots are roasted and mixed with water and then one lets the mixture evaporate. The residue induces sleep. The roots are also used as fishing poison (the fish have to be boiled before being eaten)	(Arnold <i>et al.</i> , 2002; Lock, 1989; Neuwinger, 2000; Palgrave, 1983; Venter, 1996)
<i>Milletia griffoniana</i> Baillon = <i>Derris leptorhachis</i> Harms, <i>Lonchocarpus griffonianus</i> (Baillon) Dunn, <i>Lonchocarpus</i> <i>parvifolius</i> Mich., <i>Ostryocarpus</i> <i>parviflorus</i> Micheli	Ghana: Dwindwira (akan-wasa), seryana (nzema) Nigeria: katep-oshie (boky i), erhiengbo (edo), turburku (hausa), nzasi (igbo), pere-igbéngi (ijo-izon), ito (yoruba)	Flowers: Soap substitute or soap additive, to wash the clothes Leaves: Used mixed with other ingredients in fumigation in the naso-pharyngo-pulmonary disorders Root and stem barks: Remedy against belly aches (DRC); infertility, amenorrhea, menopausal disorders, inflammatory affections like pneumonia and asthma, boils, insects bites (Cameroon)	(Ake Assi, 2001; Burkill, 1995; Keay, 1989; Lock, 1989; Sandberg and Cronlung, 1977; Staner and Boutique, 1937)
<i>Milletia impressa</i> Harms		Trunk barks: Ground to powder and drunk with sugar cane juice against schistosomiasis (Tanzania)	(Gillett <i>et al.</i> , 1971; Lock, 1989; Neuwinger, 2000)
<i>Milletia irvinei</i> Hutch. et Dalziel = <i>Robinia multiflora</i> Schumach. et Thonn.	Ghana: Osante (twi), ahaem-ete (ga)	Roots: Used to manufacture a sponge for the toilet	(Hutchinson and Dalziel, 1958; Irvine, 1961; Lock, 1989)
<i>Milletia lane-poolei</i> Dunn	Sierra Leone: Lamsa, nyanga (kissi), katindane (kono), heigbahama (loko), tolugbe (mende), ka-lin, ra-sapo (temne) Liberia: ju-enh-jrah (kru-basa) Ivory Coast: Tuibessé (abe), (akye)	Twigs: placed in water to flocculate the suspended matter	(Lock, 1989; Ake Assi, 2001; Burkill, 1995; Hutchinson and Dalziel, 1958)
<i>Milletia lasiantha</i> Dunn = <i>Milletia leucantha</i> sensu Taub., <i>Milletia angustistellata</i> sensu Dale		Roots: Decoction of the roots drunk as aphrodisiac (Kenya)	(Gillett <i>et al.</i> , 1971; Lock, 1989; Neuwinger, 2000)
<i>Milletia laurentii</i> De Wild.	Congo: Ntoko, moutoko (kikongo), ontoko (teke), otoo (mbosi)	Trunk barks: Against the hernias, it is necessary to drink twice per day a half-glass of decoction obtained by boiling a handle of barks in 2 L of water. In case of cutaneous dermatoses, one boils a handle of bark of branches in 1 L of water and it is necessary to drink	(Bouquet, 1969; Bouquet and Debray, 1974; Lock, 1989; Lubini, 1990; Neuwinger, 2000; Quattrochi, 2000)

Table 2: Continued

Species	Local name	Part used and recipe	References
	DRC: wenge (mobangi), ntoka (kimvula, kiyaka), bota (kikongo), kiboto (vuazi), lubota (ganda-sundi), mokonge, mukonge (lingala), tshikalakala (lulua), bondonko, bokonge (lokundu), mondana (kwilu), mbotu (kisantu), mokonge, mokongo (lingala) Cameroon: Awong (ewe), nsonso Gabon: Awong, otogo, son-so Tanzania: Mpande Mozambique: Jambire	35 mL twice per day. For the constipation, posology is one half-glass of same decoction. Macerated bark is used in bath or steam bath against feverish aches, epilepsy, madness, tinea and mycoses, variola, leprosy. The powder of fresh bark is applied in cataplasm with a leaf of kalanchoe well softened by passage in fire for the stomachic or intestinal pains, oedemas, ripening of abscesses. (Congo) Juice: Made with the pulp obtained by scraping the internal part of the bark: expectorant, vomitory, used in the treatment of convulsive cough and asthma, female sterility, beginning of hernia (Congo) Roots: Fresh roots ground to powder are applied on the wounds (Congo). Part not specified: Slimming, loss of weight (DRC)	Vivien and Fauré, 1985; Wilks and Issembe, 2000
<i>Milletia lenneoides</i> Vatke <i>Milletia makondensis</i> Harms	Madagascar: Arangoaika	Part not specified: Insecticide Leaves: Against the teeth ache, they are chewed or put in decoction and used in gargarism	(Boiteau, 1986; Dupuy <i>et al.</i> , 2002) (Gillett <i>et al.</i> , 1971; Lock, 1989; Neuwinger, 2000)
<i>Milletia oblata</i> Dunn	Tanzania: Mhafa	Bark: Used to treat the stomach aches. Pulverized, mixed with cold water, it is filtered to give a remedy against cough (Kenya). Roots: Decoction employed to treat the swollen parts of the body and to deal with the problems of bladder (Kenya, Tanzania)	(Gillett <i>et al.</i> , 1971; Lock, 1989; Lovett <i>et al.</i> , 2001; Neuwinger, 2000; White, 1962; Watt and Breyer, 1962)
<i>Milletia pallens</i> Stapf	Guinea: Bac sériré (farfar) Sierra Leone: Kolakare (koranko), katadane (kono), megomapole (limba), ngobo (loko), garasina (manding) Liberia: Ju-enh-jrah (kru-basa)	Wood: Chewing sticks (Sierra Leone) Internal bark: Chewed as remedy against cough (Sierra Leone) Flowers: Attracting for bees	(Burkill, 1995; Ake Assi, 2001; Hutchinson and Dalziel, 1958; Lock, 1989; Neuwinger, 2000)
<i>Milletia pervilleana</i> Viguier (name not validly published, probably synonym of <i>Pongamiopsis pervilleana</i> (Baill.) R. Vig.)	Madagascar: Anakaraka	Root bark: Fish poison Part not specified: Insecticide and antimalarial	(Debray <i>et al.</i> , 1971; Boiteau, 1986)
<i>Milletia puguensis</i> Gillett		Roots: Roots decoction drunk to treat umbilical hernias (Kenya)	(Gillett <i>et al.</i> , 1971; Lock, 1989; Neuwinger, 2000)
<i>Milletia rhodantha</i> Baillon = <i>Lonchocarpus multifolius</i> Dunn	Sierra Leone: Ngaonga, tokboi (loko), moigbama (mende), ka-lin (temne) Ghana: Okuro-sante (asante), fafrah (akan-asante), dwendura (wasa), teteoa (twi), selema, (aryi-anufo, (aowin) Nigeria: Nzachi (igbo)	Roots: Decoction drunk against the stomach aches (Nigeria) Bark: Chewed as remedy against cough (Sierra Leone) Flowers: Attracting for bees, scented	(Ake Assi, 2001; Bossard, 1996; Bouquet, 1969; Bouquet and Debray, 1974; Burkill, 1995; Irvine, 1961; Keay, 1989; Lock, 1989; Neuwinger, 2000)
<i>Milletia sanagana</i> Harms	Congo: Nganga (babinga) Sierra Leone: Ekaban, tokboi (loko), ngola (mende), katherf (temne) Ivory Coast: Félé kola (kru)	Young stems: To treat severe colics, they are put in a hot place under a plait on which lies the patient (Manon of Liberia). He also receives a bark decoction. Trunk bark: Maceration used in rectal injection for a beginning of hemia, in internal way as vomitory or in external way as analgesic and anti-oedema (Congo). Up to 500 mg kg ⁻¹ , the extract is analgesic, diuretic and hypotensor, without being toxic. The decoction is used to	(Ake Assi, 2001; Bouquet, 1969; Burkill, 1995; Hutchinson and Dalziel, 1958; Lock, 1989; Neuwinger, 2000)

Table 2: Continued

Species	Local name	Part used and recipe	References
	Liberia: Kpe tua, ti mana (manon) Centrafrican Republic: Nganda (gbaya) Cameroon: Baomi (bafia), nganda (bibaya), na tinati (sur la rivière Sanaga)	cook rice eaten in remedy against the hemorrhoids. A decoction of bark or branches is drunk as febrifuge in Ivory Coast (Kru). A cataplasm of bark is applied in case of swelling or pains. Leaves: Mixed with grease, they constitute a pomade to rub the body in case of fever (Ivory Coast). The pulp of the leaves is crushed out in cataplasm to treat the painful hernias (Congo) and swellings. Roots: To treat hypertension and as diuretic, 250 g of roots are put to macerate in 3 liters of water and one drinks 150 mL of the maceration three times per day during 1 to 2 weeks (Cameroon). Against the earaches, the otitis, drops of roots extract are deposited in the ear (Centrafrican Republic, Congo). Roots also provide a arrow poison. Whole plant: Feverish aches, cough, cephalgias, dysmenorrhoea (Ivory Coast); intestinal parasites and colic in children (Cameroon) Bark: Used as fishing poison	
Milletia stenopetala Hauman Milletia stuhlmannii Taub. = <i>Lonchocarpus mossambicensis</i> Sim	DRC: Mutubanga South Africa: Panga panga (nom commercial), muSara, muSaru (Shona)	Bark: Bark decoction is drunk to treat stomach ache (South Africa)	(Lock, 1989; Terashima and Ishikawa, 2003) (Gillett <i>et al.</i> , 1971; Lock, 1989; Neuwinger, 2000; Palgrave, 1983)
Milletia taolanaroensis Du Puy and Labat	Madagascar: Anakaraka	Part not specified: Fish poison	(Dupuy <i>et al.</i> , 2002)
Milletia thonningii (Schum. et Thonn.) Baker = <i>Robinia thonningii</i> Schum. et Thonn., <i>Milletia citie</i> Harms	Benin: Atchian atchian (Fon et Goun) Ghana: Teteku (adangme), okuro-sante, ntsentsento, pem, osantew (akan-asante), osante, santew (twi), taatso, tatso (ga), a-tite, a-tsite (gbe) Togo: Ati-te (gbe), so abalu (tem) Nigeria: Gbage-gbede, ibakwe-zgha (edo), isara (efik), tuburko, turburko, tuburku (hausa), ito, elu tiafi daaro, asunlera, abe werere ondo, agbawi kowee, olukotun eye igbo (yoruba) Sao Tome: Colima	Bark: Used as flavour in the palm wine; a tonic effect (Nigeria), bark maceration is given as purgative for young children (Gabon). In the event of dystocie, the root is chewed and one swallows the sap (Benin). Leaves: A spoonful of aqueous leaves decoction is mixed with three palm oil spoons, against measles and chicken pox (Benin). Leaves in herb tea or crushed and mixed with wood ash are used to treat the dysentery (Ghana, Nigeria). Root: The roots are macerated three days, after which the aqueous maceration is used for 5 days in baths, then as drink and in the form of carbonized powder to consume in gravy in the treatment of tuberculoid leprosy (Benin). Bark and roots are crushed together and boiled until a thick scum is formed; after cooling, the resulting liquid is drunk by the women (Nigeria) for the disorders of the menstruations and to purify blood, it is also anti-helminthic. Leaves and roots are used to treat bronchitis and mouth infections Seed: Molluscicide activity	(Adjanohoun, 1989; Aubreville, 1950; Blench, 2007; Burkill, 1995; Brunel, 1984; Hutchinson and Dalziel, 1958; Irvine, 1961; Iwu, 1993; Keay, 1989; Ladipo, 1996; Verger, 1995; Neuwinger, 2000; Okafor and Ham, 1999; Staner and Boutique, 1937)
Milletia urophyloides De Wild.	DRC: Bokumbola (bokote), bolemba (bokuma), lokokoli moke (lokundu)	Whole plant: Fishing poison	(Lock, 1989; Neuwinger, 2000)
Milletia usaramensis Taubert = <i>Sophora somalensis</i> Chiov. And its sub-species: <i>M. usaramensis</i> subsp. <i>australis</i> J.B. Gillett et subsp. <i>usaramensis</i>	Kenya: Mputa (swahili), mchupa (giriana)	Roots: Used as fishing poison (Kenya). A root decoction is drunk to treat convulsions. Roots macerated in palm wine are reputed aphrodisiac (Tanzania) Roots pulp: Applied in the event of snake bite (Kenya)	(Gillett <i>et al.</i> , 1971; Lock, 1989; Neuwinger, 2000)
Milletia versicolor Baker = <i>Phaseolodes versicolor</i> (Welw.) Kuntze, <i>Lonchocarpus de wevrei</i> Micheli	Congo: loubota (lari), omboro (teke) DRC: Lubota (kikongo), bokonge (bokuma), bosoko (lingala), yombola (lokundu).	Root bark: In aqueous decoction for the treatment of intestinal parasites, kidney pains, cough, female sterility, senile impotence of men (Congo, DRC); in infusion to rub the syphilitic wounds (DRC) Young leaves: Aqueous decoction, taken before eating the morning (1 coffee spoon for the children, 1 glass for the adults) against the intestinal parasitoses (ascaris primarily). The	(Adjanohoun, 1984, 1988; Lubini, 1990; Bouquet, 1969; Kasonia <i>et al.</i> , 1989; Lock, 1989; Walker, 1953; Neuwinger, 2000; Raponda-Walker and Sillans, 1961; Staner and Boutique, 1937)

Table 2: Continued

Species	Local name	Part used and recipe	References
	motoko (batoke), monpelenke (tshiluba), hoto (maniema) Angola: bobata Gabon: Osani wi ntsyé (mpongwè), nkalanga (galoa, nkomi, orungu, éngé), kalanga (ngowé), angwang-ngwang (fang), vimbanbang (béséki), mbang-mbagwè, ndabomana-batolyè (bakèlè), upopa-mwa-ngwèya (benga), mumbogo (bavili), mboro (mindumu)	leaves juice watered in ebullient water is taken against feverish rheumatisms, aches, headaches, kidney pains and cough (Congo). A leaves decoction is used in bath against syphilis (Gabon) Trunk bark: In aqueous decoction, is taken before eating in the morning, in smaller amount than for the leaves, to treat the intestinal parasitoses (Congo). It is boiled with the bark of <i>Berlinia grandiflora</i> and bananas as vermifuge in Gabon. Part not specified: Emetic, vomitory, laxative (Gabon) Whole plant: A decoction is prepared as a treatment of helminthiase (Congo)	
Millettia warneckeii Harms = <i>Millettia porphyrocalyx</i> Dunn, <i>Millettia ivorensis</i> A. Chev.	Sierra Leone: firapure (koranko) Ghana: Osantew (akan-asante), o-sante-akoa (twi), ahaemete (ga)	Roots: Used as sponges	(Ake Assi, 2001; Burkill, 1995; Irvine, 1961; Brunel, 1984; Hutchinson and Dalziel, 1958; Lock, 1989)
Millettia zechiana Harms = <i>Millettia stapfiana</i> Dunn, <i>Millettia ivorensis</i> A. Chev.	Ghana: Duahoma, fafraha, wuram santew, sahoma (twi), atakuruwa, frafraha, akase (ashanti), dwendura (wass.), selena (nz.) Guinea: Kpotoumon (guerzé) Nigeria: Katep oshie (bokyì), nsusu ufo (igbo)	Bark: It enters the composition of a remedy against pneumonia. The bark is crushed with the barks of <i>Alstonia boonei</i> and <i>Terminalia ivorensis</i> as well as seeds of <i>Aframomum melegueta</i> . The paste thus obtained is used to rub the chest (Ivory Coast) Roots: Used to treat gonorrhoea (Nigeria) Leaves: Crushed leaves are employed to rub the painful zones (thorax, jaws, etc). Crushed in water with salt and seeds of <i>Aframomum melegueta</i> , the leaves are also used in gargarism against the bronchial disorders and the rhino-pharyngal affections (Ivory Coast) Part not specified: Bronchic disorders (Ghana), feverish aches, cough, cephalgias, dysmenorrhoea (Ivory Coast), intestinal parasites and colics in children (Cameroon)	(Bouquet and Debray, 1974; Burkill, 1995; Carrière, 2000; Brunel, 1984; Hutchinson and Dalziel, 1958; Irvine, 1961; Lock, 1989; Neuwinger, 2000; Okafor and Ham, 1999)

- *M. conraui* (oestrogen deficiency: Njamen *et al.*, 2008)
- *M. congolensis* (antiviral activity: Soulimov *et al.*, 1975);
- *M. drastica* (oestrogen deficiency: Njamen *et al.*, 2008)
- *M. ferruginea* (insecticidal properties: Bekele, 2002; Tebkew and Chichaybelu, 2002; Debella *et al.*, 2007)
- *M. griffoniana* (antiparasitic activity: Nganga *et al.*, 2005; oestrogen deficiency: Wanda *et al.*, 2006, 2007)
- *M. pervilleana* (fishing poison: Palazzino *et al.*, 2003; Galeffi *et al.*, 1997)
- *M. sanagana* (analgesic, diuretic, hypotensive activities: Sandberg and Cronlund, 1982)
- *M. thonningii* (molluscicidal activity: Perret *et al.*, 1995; Lyddiard and Whitfield, 2001; Lyddiard *et al.*, 2002)
- *M. usaramensis* (fishing poison: Yenesew *et al.*, 1998)
- *M. versicolor* (intestinal parasitoses: Kasonia *et al.*, 1989; Ekouya *et al.*, 1990; anti-inflammatory, pain relieving: Fotsing *et al.*, 2003; Ongoka *et al.*, 2008)

Very often, the studies aimed to isolate the chemical compounds of the plant, without making the link between these compounds and the plant activities. In some studies, non-traditional uses have been assayed, such as malaria for *M. versicolor* (Mbatchi *et al.*, 2006) and *M. usaramensis* ssp. *usaramensis* (Yenesew *et al.*, 2003), insecticidal properties with the presence of rotenoids in *M. duchesnei* (Ngandeu *et al.*, 2007), α -glucosidase inhibitory activity for *M. conraui* (Tchinda *et al.*, 2007), anti-leishmanial properties for compounds from *M. puguensis* (Kapingu *et al.*, 2006). A lot of work remains to validate (or invalidate) traditional uses, assess the safety of the traditional preparation and try to connect the pharmacological activities of the isolated compounds to the known uses of each *Millettia* species.

CONCLUSION

This study permitted to collect, check and organize most of the scattered information about the medicinal properties and uses of the African *Millettia* species. Taking into account its great diversity of uses by the local populations, the genus *Millettia* deserves a detailed attention and can constitute an important source of raw material for the development of improved traditional preparations and also for the research of new active molecules. Other ethnobotanical studies and investigations are necessary and we are sure that they will highlight the extraordinary pharmacological potential

of this genus. To get this information from the tradipractitioners, a definitely new type of approach must be adopted. This approach must be based on a co-operation with reciprocal benefit. Indeed during our ground investigations, the *Nganga* (name usually given to the tradipractitioners in country of *Bantu* language) always requested a feedback concerning our data and results and expressed the wish that these results could profit the local populations. To give back its letters of nobility to the African pharmacopeia but also for the disponibilisation of the traditional preparations in the modern healthcare system, it is urgent to have a validation of these preparations, to ensure, not only reproducibility in quality and quantity but also a better traceability.

ACKNOWLEDGMENTS

We thank all the members and tradipractitioners of the team of Médecins d'Afrique who helped us in our field investigations and support us daily in our work and the Dr. Labat of National Museum of Natural History (Paris, France) for his help about the taxonomy of *M. pervilleana*.

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