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## Research Paper

## Historical versus contemporary medicinal plant uses in Ghana

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## ABSTRACT

**Ethnopharmacological relevance:** Three extraordinary, historical documents stemming from observations made in 1697, 1803 and 1817 quote medicinal plant uses among the Fante, Ga and Ashanti people of present-day Ghana, and can be linked to original botanical specimens in European herbaria. This provides a unique opportunity to gain insight to the historical *materia medica* of Ghana and compare this to contemporary medicinal plant uses. By critical literary and taxonomic review, the present study (re-) establishes the earliest known history of many important Ghanaian medicinal plants, and assesses the scale of change and loss of medicinal plant knowledge in Ghana over time. The study provides the foundation to reconstruct lost or discontinued Ghanaian plant uses in local or ethnopharmacological contexts.

**Materials and methods:** Historical botanical specimens were located in the herbaria of University of Copenhagen Herbarium (C) and British Museum of Natural History (BM). The classification and synonymy of the specimens were updated for the study, and the historical vernacular names and medicinal uses of the plants compared with 20th/21st century literature. The plants of the historical Ga *materia medica* were (re-)collected to aid in semi-structured interviews. The interviews aimed to document the contemporary uses and names of the plants among the Ga, and to determine to what extent the historical medicinal uses and names are extant.

**Results and discussion:** The study identified 100 species in historical medicinal use in Ghana, which could be linked to 134 unique uses and 105 vernacular names in Twi (Ashanti/Fante) and Ga. Most of the plants are common in Ghana. At least 52% of the historical vernacular names appear to still be in use today. Of the specific historical uses, 41 (31%) were traced among contemporary medicinal plant uses in Ghana and represent some of the most important Ghanaian medicinal plant species. However, 93 (69%) of the historical uses could not be traced and appears to be discontinued or forgotten. Among the Ga, two medicinal plants species have become rare or locally extinct, and thus the vast majority of the loss of knowledge appears to be due to cultural extinction.

**Conclusions:** The scientifically strong voucher material allowed for identification of a high number of historical medicinal plants and their roots in traditional Ghanaian medicine systems 2–300 years ago. The *materia medica* of the Fante, Ga and Ashanti of Ghana has changed considerably over time. The “forgotten” historical uses warrant further studies to determine the pharmacological activity of these plants. This could provide the foundation for reconstruction of historical medicinal plant uses in evidence-based modern contexts.

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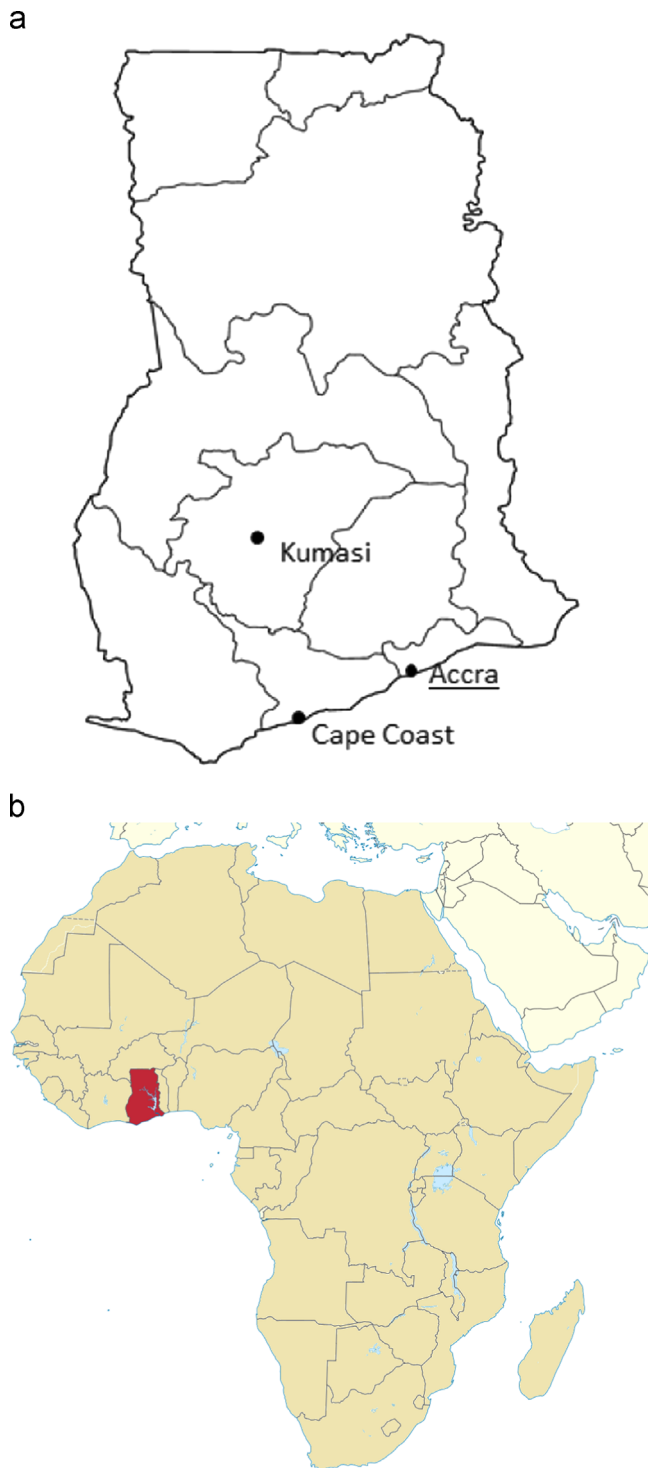
## 1. Introduction

The rich history of the West African cultures and their interactions with Nature extends back millennia, having for a long time been passed down through generations solely by oral tradition. Written records of West Africa only began with the arrival of

Europeans, who exchanged guns and commodities for human beings in the 16th–19th centuries as part of the Atlantic slave trade. Extraordinarily, the works of three unique individuals stand out in this sad and inhumane context, by being intellectual exchanges: descriptions and documentations of local knowledge of medicinal plants, their properties and their names. For the Fante, Ga and Ashanti people in present-day Ghana (Fig. 1), there exists documentation of their *materia medica* and traditional medicine practice dating back to 1697, 1803 and 1817, respectively. Of ethnopharmacological interest, one of the earliest historical sources to West Africa, then known as Guinea, is the observations of the Dutch merchant Willem Bosman. He

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**Fig. 1.** Map of Ghana showing the centers of the areas traditionally inhabited by the Fante (Cape Coast), Ashanti (Kumasi) and Ga (Accra).

stood, in his own words, amazed by the capabilities of the local plants and the curing skills of the natives, and wrote: “The chief Medicaments here in use, are first and more especially Limon or Lime-Juice, Malaget, otherwise called the Grains of Paradise, or the Cardamom, the Roots, Branches, and Gumms of Trees, about thirty several sorts of green Herbs, which are impregnated with an extraordinary sanative Virtue.”. And, “The green Herbs, the principal Remedy in use amongst the Negroes, are of such wonderful Efficacy, that ‘tis much to be deplored that no European Physicians has yet applied himself to the discovery of their Nature and Virtue; for I don’t only imagine, but firmly believe, that they would prove

more successful in the practice of Physick than the European Preparations...” (Bosman, 1703). However, lacking skills as a botanist, Bosman did not describe the specific uses of plants.

In 1695–97, John Smyth, a minister of the Anglican Church, collected plants in the Cape Coast area. He was likely the first scientific plant collector in Sub-Saharan Africa (Hepper and Neate, 1971). His observations from Cape Coast are published in a letter from the apothecary James Petiver to Hans Sloane titled “A Catalogue of some Guinea-Plants with their Native Names and Virtues” (Petiver, 1697). The letter lists 40 plants and vernacular names and local uses, with pre-Linnaean names or descriptions. This ethnomedicinal information can be linked to the original specimens (Fig. 2) kept in the Hans Sloane collection (BM-SL, British Museum of Natural History). These extraordinary, ethno-botanical vouchers were botanically identified and reviewed by botanist J.B. Hall in 1966 (unpublished). In addition to the published letter, the herbarium collection adds a further four specimens, with uses and vernacular names. The Cape Coast area was in 1697, as well as now, mainly inhabited by the Fante.

Henry Tedlie (1792–1818) participated in Bowdich’s mission from Cape Coast to the Ashanti capital of Kumasi in 1817. He died shortly after the expedition, and before he was able to analyse his collections. Botanist Robert Brown reviewed the specimens in London in 1818 and determined 15 to species level, of which three served as type specimens. These were published along with 38 Ashanti plant names and their medicinal uses among the Ashanti, as well as a list of prevalent diseases which Tedlie observed in the kingdom (Bowdich, 1819). Unlike the collections of John Smyth, Tedlie’s specimens were not kept separate, and have been dispersed into the herbaria of Kew (K) and British Museum of Natural History (BM). The area around Kumasi is still predominantly inhabited by Ashanti. The Ashanti and the Fante are the two largest ethnic groups of the Akan peoples of Ghana, which in 2010 counted 11.5 million people or 47.5% of the total population (Ghana Statistical Service, 2012).

Peter Thonning (Fig. 3), a physician and trained botanist, was in 1799–1803 sent out by the Danish government to assess the viability of establishing colonial plantations in the Danish sphere of influence on the Guinea Coast, i.e. roughly from present-day Accra to the Volta River, and inland to Akuapem. Out of Thonning’s astonishing collection, more than a thousand specimens survived the bombardment of Copenhagen in 1807. Thonning’s plants are most often considered together with the collections of another Dane (although born German); Paul Isert who collected in the same area 1783–86, and wrote about his experiences and observations in a series of letters (Isert, 1788). However, Isert adds very



**Fig. 2.** Specimen of *Cnestis ferruginea* collected by John Smyth in 1695–97 around Cape Coast.

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