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Therapeutic landscapes of the Jola, The Gambia, West Africa

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This paper contributes to the ‘new’ medical geography through its analysis of the therapeutic landscapes of the Jola of The Gambia. The paper advances the debate surrounding the conceptualisation of medicine and health through a review of literature on African medicinal systems; it examines in detail the health care system of the Jola of The Gambia, documenting indigenous human and ethnoveterinary medical beliefs and practices and focusing in particular on the role of herbal medicine; and it discusses the interactions and links between indigenous medicine and biomedicine, thus demonstrating the importance of placing an understanding of health care systems in different places within an awareness of global power relations. The paper therefore links cultural perspectives with a political economy analysis, to highlight the importance of place and specificity of cultural context when investigating health care beliefs and practices. The intention of the paper is to present a theoretically informed empirical case study which reinforces the practical value of a ‘new’ medical geography. © 1998 Elsevier Science Ltd. All rights reserved

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Introduction

Kearns (1995, p. 251) has recently argued that medical geography is facing an intellectual challenge from postmodernism and social theory. This challenge has focused on a recognition of the variations in health beliefs, practices and experiences of different social groups, which are constructed and played out in distinctive places. Medical geography is therefore moving beyond its ethnocentric foundations to highlight the variability of meanings, cultural practices and material conditions shaping people’s relationships to disease, illness, health and medicine. In particular, Gesler (1991) has advocated studies of ‘folk’ medicine because it serves the majority of people in developing countries: “If social scientists are really interested in the health of all the world’s inhabitants, then they must study non-professional traditional healing...research is trickling in but there is not nearly enough” (Gesler, 1991, p. 122). Having conducted ethnographic research on West African forestry (which included work on indigenous medicine), I was struck by the possibilities of contributing to this ‘new’ medical geography through an examination

of the health care beliefs and practices, collectively referred to as the ‘therapeutic landscapes’, of the Jola of The Gambia, West Africa¹. The intention of the paper is to present a theoretically informed empirical case study which reinforces the practical value of a ‘new’ medical geography for scholars and policy-makers.

The aims of the paper are three fold: first, to advance the debate surrounding the conceptualisation of medicine and health through examination of literature on African medicinal systems; secondly, to examine in detail the health care system of the Jola of The Gambia, documenting indigenous human and ethnoveterinary medical beliefs and practices and focusing in particular on the role of herbal medicine; thirdly, to discuss the interactions and links between indigenous medicine and biomedicine, thus demonstrating the importance of placing an understanding of health care systems in different places within an awareness of global power relations².

The paper therefore links cultural perspectives with a political economy analysis, to focus on the “structure of meaning and understanding in the places where people live, experience sickness and

use health services” (Moon and Jones, 1994, p. 2). This discussion will focus on one particular ethnic group’s use and understandings of medicine and illness, highlighting the importance of place and specificity of cultural context when investigating health care beliefs and practices.

Indigenous medicine in Africa

First a short generalised discussion regarding health care beliefs in Africa is needed to contextualise the research (see Good, 1987 and Janzen, 1978 for more detailed discussions). Medicinal systems in Africa have often been inaccurately regarded in the same conceptual terms as biomedicine in European societies. In Europe, illness is commonly perceived as due to physiological or scientifically explained causes. Biomedicine is understood to follow natural laws which have nothing to do with the supernatural, a person’s psychological condition or their social milieu. Biomedicine therefore gives precedence to ‘technique’ over ‘person’ and their social identity within a community (Good, 1987, p. 13).

In contrast, in many African societies the significant disparity between material and spiritual worlds has not been made to the same extent as with European societies³. Illness may therefore be seen as having a social or spiritual origin, in addition to physiological causes. A medicine can thus be both a substance used to treat and prevent illness or anything used to control the spiritual cause of illness. Herzog (1936, p. 150) defined African medicine as “...a medicinal plant, substance or preparation, a fetish or any other substance made potent by magic so that it is capable of healing as well as causing sickness or some other misfortune...A medicine man does not serve the medicine, he serves the soul of the medicine”. Thus according to Harley (1970, p. 10), a medicine is any substance whose power is under control, or known to be controllable, usually, but not exclusively by a medical practitioner. In Africa there is an acceptance of the metaphysical which embraces the unity and inter-relatedness of phenomena whereas the European scientific approach focuses on causal inter-relationships between physical phenomena. A psychosocial approach to medicine is therefore utilised in African medicine in which a person’s body, mind and soul are conceived as an indivisible whole; ill health can therefore reflect “discord in the social body”, a “rupture of life’s harmony” or the “activation of supernatural forces” (Good, 1987, p. 14). Indeed, in Africa medico-religious or spiritual understandings of illness can at times lead to effective therapeutic action, so the line between the natural and supernatural is often blurred. Without understanding the spiritual rationale to health and illness in Africa, sys-

tems of health care may appear to be illogical and irrational, resulting in ethnocentric prejudices (Sempebwa, 1983).

In Africa the medical practitioner will inform the patient why they are ill in contrast to a European doctor who is more likely to tell the patient how they became ill. For a practitioner to be successful in Africa, both an answer and antidote must be provided to explain why the illness occurred at a particular time and why it affected the particular individual. The practitioner must make sense of the illness, often as important as the cure. If a cause cannot be deduced from daily experience then a cause will be sought in the spiritual realm. Diagnosis of the cause, nature, treatment and prevention of reoccurrence of the illness is hence partly physiological, partly psychological. A medicine may thus be of ‘material’ origin, including preparations made from plant or animal products, or of ‘spiritual’ origin, such as **jujus** (amulets) or fetishes⁴. Most practitioners and most remedies involve a combination of both material and spiritual explanations and techniques. For example, plants used as medicine are thought beneficial not only for their organic properties but also due to the spiritual force imbued by nature in living things and the role of the ancestors, spirits and gods in blessing the plants which ‘activates’ their use as medicine. A medicinal practitioner in Africa can therefore help the patient live in peace with other community members through herbs, spiritual rituals and the regulation of diet and behaviour. Indigenous medical systems in Africa are therefore all-embracing adaptive systems of healing which are deeply embedded in religious and socio-cultural institutions, philosophical outlooks and socio-economic structures (Good, 1987, pp. 2, 5). For this reason, unique systems of indigenous medicine have developed in distinct places, varying according to personal, ethnic and regional differences in cultural symbols, diagnoses and therapies.

Interest in African indigenous medicine has a long history. For example, Thunberg (1795) identified 24 plants used as medicine by South Africans and was convinced of their therapeutic value, Thoms (1909) identified 102 plants from West Africa, giving brief toxicological and chemical notes while Pobéguin (1912) wrote a compendium of 654 treatments used in West Africa. Dalziel (1937), in an important publication, also described the medicinal uses of 700 plant species in West Africa. Although it was not Dalziel’s (1937, p. 7) original intention, the compendium also included folk law since he stated that “...much native medicinal practice cannot be easily separated from magic and popular beliefs”.

More recent research on African medicine has estimated that 95% of medicine comes from

plant material (Prescott-Allen, 1982, p. 47) and for this reason research has focused on herbal remedies rather than animal cures and on medicine to cure individuals rather than veterinary medicine. The role of ethnoveterinary medicine in Africa has only recently received attention through McCorkle and Mathias-Mundy's (1992) thorough review. They suggested that at least 30% of plant species used to treat animal diseases were effective and quoted numerous examples of pharmacology used by pastoralists throughout the African continent. They also investigated indigenous vaccination systems; for example, Fulani pastoralists of West Africa use infected lung tissue to inoculate livestock against contagious bovine pleuro-pneumonia. Indigenous forms of surgery recorded included wound care, cauterisation, castration, bloodletting and obstetrics. Management practices were also utilised by pastoralists to prevent animal illness, such as seasonal herding strategies to avoid disease outbreaks and the alteration of daily grazing strategies to avoid disease-bearing pests. Pests and parasites were found to be controlled through washing, burning and fumigation of animal quarters. Work on ethnoveterinary medicine is thus a relatively recent but burgeoning field of research (Fre, 1989; Grandin *et al.*, 1991; Mathias-Mundy and McCorkle, 1989).

In contrast, work on indigenous medicinal plants has increased in the last three decades, being initiated in 1968 by the Organisation of African Unity (OAU) through the Scientific, Technical and Research Commission (STRC). For example, Gbile and Adensina (1987) have compiled an ethnobotanical survey of medicinal plants in Nigeria, Macfoy (1986) in Sierra Leone, Sarpong (1986) in Ghana and Bever (1985) in tropical West Africa. Such surveys have, however, frequently concentrated on biological studies devoid of cultural and other contextual data. Literature on indigenous medicine thus tends to be "...either botanically uninformed or anthropologically naive" (Etkin, 1986, p. 2). Considering the dual model of disease causation, a research approach is essential which considers indigenous medicine from a perspective including both spiritual and material worlds.

The most recent strands of research on medicine and health in Africa shift attention away from indigenous medicine towards three main foci. First, investigations surrounding AIDS and HIV (Green *et al.*, 1995; Ulin, 1992). The second main focus is studies of the current health situation in Africa (Shaw and Elmendorf, 1994; Walker, 1995), including research on the impact of recent economic reforms on health care (Mogedal *et al.*, 1995) and management and policy reform (Gilson, 1995). Finally, there are also many recent studies investigating the understand-

ing of health and illness from varying cultural perspectives (Franklin *et al.*, 1996; Gyapong *et al.*, 1996; Iyun and Tomson, 1996; Opala and Boillot, 1996). In this literature few links are drawn between indigenous and biomedicine and the dearth of research by geographers is a noteworthy and surprising observation since the geographer should be well-placed to contribute to cross-cultural research through wide-ranging methodological training and place sensitive research.

Indigenous medicine in The Gambia

While limited work has been done on the role of indigenous medicine in The Gambia, there has been considerable interest in biomedicine. The Gambia was selected as the 'ideal' research location by both the Nutrition Field Working Party of the Colonial Office in 1946, situated at Genieri in Middle River Division, and by the Medical Research Council's Dunn Nutrition Unit situated at Keneba in 1949. Research at the Dunn Nutrition Unit has focused on selected medicinal topics of key relevance to human health, such as infancy, childhood, pregnancy and malaria (Menendez *et al.*, 1993; De Francisco *et al.*, 1994; Mills *et al.*, 1994; Lindsay *et al.*, 1995).

Research on indigenous medicine in The Gambia has focused on herbalism rather than ethnoveterinary medicine, divination or midwifery. One of the first recorded documents on Gambian medicinal plants was compiled by Marshall (1886) for the West African Court. Forty-four plants used in a medicinal capacity were listed, accompanied by 22 specimens. A later record concerning medicinal plants in The Gambia was contained in the Colonial Annual Report for 1908. Fifteen plant species with local names were given, and also indigenous methods of preparation. Unfortunately, the colonial government of The Gambia was slow to appreciate the potential uses of herbal medicine. On 27th April 1939, in reply to a request for information on indigenous medicine from the Secretary of State for the Colonies, the acting Governor of The Gambia replied that "...no research in connection with this subject has ever been undertaken in this colony". Such an attitude was in contrast to the Governor of Nigeria who replied: "I have no doubt a great amount of interesting material could be gained from an intensive investigation of the indigenous drugs used in West Africa", and the Governor of the Gold Coast who replied "...the potential value of the information which might be derived from a careful analysis of the herbs used by the more reputable African practitioners has long been recognised in this country"⁵.

By 1976 the value of indigenous medicine in The Gambia was becoming widely recognised. In October and December 1976 a local newspaper, *The Gambia News Bulletin*, contained two articles (Baldeh, 1976; Saïdy, 1976) which, although stating that they were “old fashioned”, nevertheless extolled the merits of local herbal remedies and described charms useful against witchcraft and for attracting members of the opposite sex. The first important compilation of medicinal uses of flowering plants in The Gambia was by Hallam (1979), who outlined the different preparations of 82 plants used for ‘bush medicine’. Hallam (1979) was concerned at the loss in knowledge of indigenous cures:

“There are generations of children now being brought up in the urban areas who cannot recognize the common plants of the countryside. It seems that to retain the basic knowledge of bush medicine, which has hitherto been handed down by word of mouth in a village community, there is a need to teach school pupils about the uses of plants surrounding them. This teaching could then become incorporated into a school curriculum” (Hallam, 1979, p. 191).

An attempt was made to implement this suggestion by the President’s Award Scheme in 1988. Participants documented elders’ knowledge of medicinal plants, recording 120 plants with over 200 medical uses. The Ministry of Education expressed a wish to include the data in educational booklets for the science curriculum (Seppings, 1989).

There is also limited research on the ‘spiritual’ side of medicine in The Gambia. An exception is Sapir (1970) who outlined the concept known as **kujaama** by the Jola of the Fogni region of the Casamance. **Kujaama** represented a complex symbol that defined a set of pollution rules on avoiding blood and food both between generations and between husband and wife. The belief was that ‘separate’ categories should not be mixed. **Kujaama** also referred to a power or spirit that punished violations of taboos and neglect of rituals. **Kujaama** ‘caught’ the violators by acting as a ‘poison’ that caused coughing and diarrhoea. The poison was neutralised by the medicine of a plant called **ebunkbujam**⁶. **Kujaama** was one of a number of spirits inhabiting the Jola world, collectively known as **sinaati**. They were created by a god called **emit** who also created humans and the rest of the world. According to Mark (1977, pp. 343–344) the **sinaati** were associated with particular lineages and thought to inhabit large trees or specially constructed shrines. Each shrine was entrusted to a guardian. In pre-Islamic times individuals would approach the **sinaati** both to fulfil ritual obligations and to ensure success in

cultivation and war. The shrines were consulted in times of illness or misfortune. The **sinaati** were believed to bring ailments to those who transgressed the rules of social and ritual conduct. This essentially medicinal function survived, although most of the population became converted to Islam.

Thus while research on indigenous medicine and beliefs has expanded in The Gambia, there has, to date, been only limited research on indigenous medicine from the big-behavioural lay perspective (Bledsoe *et al.*, 1994, is an exception). Work on medicinal plants consists of compendia of useful species which lack explanation of the plants’ preparation and use in specific cultural contexts. Additionally, there is no work on animal species with medicinal value or on indigenous veterinary medicine. It is with these research gaps in mind that the fields of care of the Jola of The Gambia are examined below.

Background, case study and methodology

The Gambia is a small country situated in the westernmost part of Africa, with a GNP per capita of \$430 in 1994 (World Bank, 1996) (*Figure 1*). The Gambian economy is based on subsistence agriculture, the most important food crops cultivated being rice, maize and millet grown on small family farms. The groundnut is the main cash crop, representing 88% of exports in 1991 (Europa Publications, 1992). The tourist industry has recently expanded in The Gambia, and with over 100 000 tourists visiting each year, tourism now accounts for 11% of GDP (CIA



Figure 1. Ethnic groups of the Senegambia region

statistical data base). The estimated population of the country is 1.1 million (1994) which comprises 14 separate ethnic groups including the Mandinka, Wolof, Jola, Fula, Tukolor, Serer and Serahuli. The Gambia is situated in the sub-Saharan tropical climate zone where annual rainfall variations are marked and rainfall is erratic. The natural vegetation of The Gambia consists of Guinea Savannah and Guinea Woodland Savannah. Forests cover 200 000 hectares of the country, accounting for 17% of the total land area (Hunter, 1995). Annual deforestation was estimated at 0.8% the total land area from 1981–1990 (World Bank, 1996).

Although the Ministry of Health actively promotes health and nutrition of the population as part of its commitment to the principle of 'health for all', high infant and child mortality nevertheless persist in The Gambia and life expectancy remains amongst the lowest in the world. In 1994, life expectancy at birth was 45 years whereas it was 52 years for sub-Saharan Africa and 68 years for Europe and Central Asia at that time. The World Bank (1996) estimated the infant mortality rate in 1994 to be 128 per 1000 live births, these data varying with season and showing a rural–urban differentiation. Child survival rates are amongst the poorest in the West Africa region (UNICEF, 1992). Maternal mortality rates are also high and show a clear urban–rural differences: 6 deaths per 1000 live births in urban areas compared to 12 in rural areas (Harpham, 1996). Despite poor estimates of health statistics, population growth in The Gambia is significant, being the highest in the world (3.9%) from 1990 to 1994.

This work is based on research which was undertaken with one rural Jola (Diola, Dyola) community in The Gambia from 1988–1989 and updated in 1991 and 1993. One village, located in Western division of The Gambia, was purposively selected for detailed study, following Gesler's (1991, p. 214) "desirable research direction" to probe more deeply into the medical culture of a small number of people living out their daily lives in a relatively small area⁷. Data were collected by different methods including surveys, structured interviews and participant observation. One detailed survey of 38 individuals was undertaken for a period of one year to gather information on the number and type of indigenous medicine used by each individual per week⁸. Informal individual interviews were undertaken to obtain in-depth information from medicinal practitioners regarding their specialised medical practice. Group interviews were also conducted with the village population to determine more common knowledge regarding the use of indigenous medicine, decision-making involved in the choice of health care treatment and perceptions

of the value of indigenous medicine in relation to biomedicine. Participant observation involved daily engagement and interaction in the life of the villagers to determine how they acted with respect to indigenous medicine and to discern the meanings and beliefs they attached to these cures. By combining these different methods over one year and for two follow-up periods of two months each, attempts were made to interpret information from within the cultural framework of the studied population, although wide-ranging methodological, analytical and ethical issues were raised in such attempts (Madge, 1994).

Fields of care among the Jola

A survey undertaken in the village in 1989 and followed up in 1991 and 1993 identified 70 plant species with medicinal uses (Table 1). These included remedies for intestinal problems, orthodontal diseases, external skin complaints, body pain, respiratory problems, medicine relating to pregnancy, child birth and fertility, medicine for fever and malaria, medicine for bone and eye problems, therapies for more serious illnesses (snake bites, gonorrhoea, leprosy, yellow fever), spiritual medicine and preventative tonics. The most common plant species used was **busayeat** (*Cassia sieberiana*) which was included in nine medicinal recipes⁹. Ake Assi (1984) also found that this species was frequently used in medicinal preparations among the Ando group of the Ivory Coast. Most commonly used parts of plants were bark, roots, leaves and fruit; less frequently used were seeds, branches, flowers, stalks, oil and sap. Knowledge on the therapeutic value of newly introduced species, such as neem (*Azadirachta indica*), cashew (*Anacardium occidentale*) and neverdie (*Moringa oleifera*), was being rapidly acquired and equally important, not only wild species had medicinal value but cultivated crops and trees were also used as medicine, for example, lime (*Citrus aurantiifolia*), mango (*Mangifera indica*), cola nut (*Cola acuminata*) and guava (*Psidium guajava*). Veterinary medicine was used by herdsman to cure 14 animal diseases by using a combination of religious, herbal, physical and animal medicine (Table 2)¹⁰. Ethnoveterinary medicine included pharmacology, vaccination, surgery such as wound care and bloodletting and management techniques such as pest control, dietary supplementation and religious beliefs and practices. Similarly, the hunters were the custodians of knowledge on animals and used 13 animal species to cure human illness (Table 3). These ranged from serious complaints, such as snake bites and whooping cough, to common complaints such as fever and diarrhoea. The medicine usually involved ingesting some part of the animal and was often used in combination

Table 1. Medicinal uses of plants

Species	Disease/symptoms	Part used	Species	Disease/symptoms	Part used
			<i>Cassia tora</i>	Constipation	Root
			Fukangol (j)		
			Jambanduro (m)		
<i>Acacia albida</i>	Mouth sores/ulcers	Bark	<i>Cissampelos</i>	Stomach pain	Root
Bubrick (j)	Stomach pain	Root	<i>mucronata</i>		
Barangsango (m)	Snake bite	Root	Sanjelow (m)	Child body sores	Stick/Leaf
<i>Acacia polyacantha</i>	Body swelling	Vine	<i>Citrus aurantifolia</i>	Fever	Leaf/Fruit
Fukem (j)	Body pain	Root	Bulem (j)	Stomach pain	Root
Bambakoyo (m)			Lemuno (m)		
<i>Acacia scorpioides</i>	Bad gums	Bark	<i>Cola acuminata</i>	Childbirth	Nut
Bubanna (j)	Cataracts	Bark	Kuruo (m)		
Bano (m)	Dressing jujus	Fruit	<i>Combretum</i>	Warts	Leaf
<i>Acanthospermum</i>	Warts	Leaf/root	<i>hypopilinum</i>		
<i>hispidum</i>			Katanyangkungo	Itchy body	Leaf/Root
Gajambaruso (j)			(j)		
Semberbuko (m)			Katangkoioyo (m)	Diarrhoea with blood	Leaf
<i>Adansonia digitata</i>	Nits	Leaf		Birth tonic	Leaf
Buback (j)	Stomach pain	Leaf	<i>Combretum</i>	Chest pain	Leaf
Sito (m)	Body blister	Fruit pulp	<i>micranthum</i>		
	Diarrhoea	Fruit pulp	Buteek (j)	Idol medicine	Stalk
	Chest pain	Bark	Kinkeliba (m)	Cough	Stalk
	Sores	Root		Mouth sore	Stalk
	Worms	Root	<i>Combretum nigricans</i>	Body pain	Leaf/Root
<i>Aframomum</i>			Jambakato (m)	Chewstick	Stick
<i>melegueta</i>			<i>Combretum</i>	Diarrhoea	Root
Buroomi (j)	Gonorrhoea	Fruit	<i>paniculatum</i>		
Bayleng-kumpango (m)			Kunundingdolo-jambaback (m)	Worms	Root
<i>Amorphopallus</i>	Stimulate lactation	Root string	<i>Datura suaveolens</i>	Body pain	Leaf
<i>consimilis</i>			Kubayjarrow (m)	Internal inflammation	Leaf
Ehkem (j)	Diarrhoea	Bark		Hallusagent	Leaf
Wulo kono jabo (m)			<i>Dialium guineense</i>	Pregnancy	Leaf
<i>Anacardium</i>	Diarrhoea	Bark	Bujaala (j)	Chewstick	Stick
<i>occidentale</i>			Kosito (m)		
Casuwu (j) (m)			<i>Dichrostachys</i>	Protection in war	Root/Bark
<i>Annonia senegalensis</i>	Fever/body pain	Leaf	<i>glomerata</i>		
Butotok (j)	Diarrhoea	Bark	Burringand (j)	Toothache	Leaf
Wulo kono	Chest/back pain	Leaf	Corulingo (m)	Body sores	Leaf
sunkungo (m)				Diarrhoea	Leaf
<i>Anthocleista procera</i>	Purgative	Seed/Nut	<i>Elaeis guineensis</i>	Snake bite	Oil
Bupokeye-ehgombam (j)			Ehporkel (j)	Mosquito repellent	Flower
Fafo jambo (m)			Tengo (m)	Skin care	Kernel oil
<i>Azadirachta indica</i>	Stomach pain	Leaf	<i>Erythrina</i>	Fresh cut	Bark
Neme (j)	Sores	Leaf	<i>senegalensis</i>		
Yiringdong	Headache	Leaf	Busontah (j)	Fever	Bark
kunango (m)			N'dolingo (m)		
<i>Bombax</i>	Chest pain	Bark	<i>Fagara</i>	Toothache	Bark
<i>buonopozense</i>			<i>zanthoxyloides</i>		
Bunkungo (m)			Bilinkit (j)	Chest pain	Leaf
<i>Bridelia micrantha</i>	Constipation	Root	Bahfey (m)		
Balaneat (j)	Chewsticks	Stick	<i>Ficus gnapalocarpa</i>	Chest pain	Leaf
Bisako (m)			Bukontu (j)		
<i>Calotropis procera</i>	Sore hands	Leaf	Soto (m)		
Baniwani (j)	Toothache	Leaf	<i>Ficus vogelii</i>	Body pain	Root
Kipanpango (m)			Bupok (j)		
<i>Cassia absus</i>	Constipation	Leaf	Toro (m)		
Jafreecake (j)			<i>Gardenia</i>	Headache	Root
<i>Cassia occidentalis</i>	Body pain	Leaf	<i>erubescens</i>		
Geebungeeffarra (j)	Fever	Leaf	Gahen (j)	Yellow fever	Root
Kassala (m)	Sores	Leaf	Tankango (m)		
	Cough	Leaf/Stick/ Flower	<i>Gutera</i>	Fever	Leaf
	Constipation	Root	<i>senegalensis</i>		
<i>Cassia sieberiana</i>	Body tiredness	Leaf	Bufunuk (j)		
Busayeat (j)	Constipation	Leaf	Kankanango (m)	Obesity	Leaf
Sinjango (m)	Sores	Bark		Stomach pain	Leaf
	Internal inflammation	Bark		Chesty cough	Leaf
	Backache	Bark		Body pain	Root
	Rheumatism	Bark		Chewstick	Stick
	Ringworm	Root		Snake bite	Bark
	Fever	Root	<i>Hannoa undulata</i>		
	Eye trouble	Leaf	Kulukulu (m)		

Species	Disease/symptoms	Part used	Species	Disease/symptoms	Part used
<i>Hibiscus surratensis</i>	Illness prevention	Leaf	<i>Paullinia pinnata</i>	Fever	Leaf
Gagess ehramba (j)	tonic		Oohtogefairgear (j)	Body pain	Leaf
Wulo kono kutchu (m)			Jambalulu (m)	Diarrhoea	Leaf
<i>Hyptis suaveolens</i>	Cold	Leaf	<i>Pilostigma thonningii</i>	Headache	Leaf
Jammakarla (m)	Mosquito repellent	Stalk	Buhangken (j)	Stomach pain	Fruit
	Fresh cut	Sap	Fara (m)	Back and chest pain	Seed pod
<i>Icacina senegalensis</i>	Swollen stomach	Root		Smallpox	Seed pod
Furabang (j)	and constipation			Sore eyes	Leaf
Manankasa (m)	Snake bite	Leaf	<i>Plumbago zeylanica</i>	Immunity in warfare	Leaf
	Backpain	Leaf	Jabbond (j)	Headaches	Leaf
<i>Imperato cylindrica</i>	Bladder pain and	Root	<i>Prosopis africana</i>	Strength tonic	Bark
Eleet (j)	urination problems		Bukyembo (m)	Chewstick	Stick
Surlingo (m)			<i>Psidium guajava</i>	Constipation	Leaf
<i>Jatropha curcas</i>	Constipation	Seed	Bujeep (j)		
Tubab taro (m)	Chewstick	Seed	Guyabo (m)		
<i>Khaya senegalensis</i>	Illness prevention	Bark	<i>Pterocarpus erinaceus</i>	Fungal infections	Bark
Bukai (j)	Feet sores	Bark	Bukon (j)	Sore gums	Bark
Jallo (m)	Internal inflammation	Bark	Keno (m)	Body pain	Leaf
	Worms	Bark	<i>Pterocarpus erinaceus</i>	Fungal infections	Bark
	Child head and body sores	Bark	Bukon (j)	Sore gums	Bark
			Keno (m)	Body pain	Root
<i>Landolphia heudelottii</i>	Constipation	Fruit	<i>Ricinus communis</i>	Sores	Leaf
Bufem (j)	Body pain	Root	Bakotaylol (j)	Fever	Leaf
Folay (m)			Tumbusuma (m)	Constipation	Fruit
<i>Leptandenia lancifolia</i>	Cold	Sap	<i>Scoparia dulcis</i>	Severe chest pain	Stalk
Busumba (j)	Sores	Sap	Timin-timio (m)		
Sora (m)	Stimulate lactation	Leaf	<i>Solanum indicum</i>	Cataracts	Root
<i>Lippia multiflora</i>	Chest and body pain	Leaf	Buparpum (j)	Defence against	Root
Asinsilyamo (j)			Sulajato (m)	witches	
Sinsilyamo (m)			<i>Stylosanthes mucronata</i>	Chest pain	Leaf
<i>Mangifera indica</i>	Diarrhoea	Bark	Bankegteer (j)		
Bruito (j)			M'bono (m)		
Duto (m)			<i>Strychnos spinosa</i>	Aphrodisiac	Root
<i>Mitragyna inermis</i>	Juju construction	Wood	Ehsigeer (j)	Body pain	Root
Bujungo (j)	Body pain	Leaf/Stick	Patakooley (m)	Hernia	Root
	Snake bite	Leaf	<i>Tapinanthus bagwensis</i>	Worms/stomach pain	Leaf
<i>Moghania faginea</i>	Body/chest pain	Leaf	Ehkorlinko (j)	Yellow fever	Leaf
Bapomb (j)	Pelvic/back pain	Root	Kunundingdolo (m)		
Sanfeeto (m)	Stomach pain	Root	<i>Terminalia albida</i>	Malaria	Leaf
	Leprosy	Leaf	Bupokhende (j)	Chewstick	Stick
	Chewstick	Stick	Wolo (m)	Hiccups	Leaf/Root
<i>Moringa oleifera</i>	Illness prevention	Leaf		Twitches	Root
Neberdayo (m)	tonic			Stomach/back pain	Leaf/Root
<i>Nauclea latifolia</i>	Diarrhoea	Bark		Fever	Bark/Root
Burleyebok (j)	Sores	Root	<i>Terminalia avicennioides</i>	Very hot fever	Leaf
Batio (m)	Rheumatism	Root	Buleetar (j)	Sores	Root/Leaf
	Body pain	Root	Wuluohyellow (m)		
	Stomach pain	Root	<i>Uvaria chamae</i>	Frequent headache	Bark
	Thin children	Fruit	Buleyoo (j)	Fever	Bark
	Fever	Root/Bark	Sambeyfingo (m)		
<i>Oxytenanthera abyssinica</i>	Diabetes?	Leaf	<i>Vernonia</i> sp.	Old bad sores	Leaf/Stick
Fujeel (j)			Buntart (j)	Childbearing tonic	Leaf
Bungo (m)			Jambakunango (m)	Sores	Root
<i>Parinari macrophylla</i>	Constipation	Fruit	<i>Vitex doniana</i>	Fresh cut	Root
Buwel (j)			Bujink (j)	Preventative tonic	Leaf
Tamba (m)			Kutufingo (m)		
<i>Parkia biglobosa</i>	Tooth ache	Bark			
Bukombong (j)	Boils	Seed			
Netto (m)	Strength tonic	Seed			
	Sores	Seed			
	Yellow fever	Fruit pulp			

j = Jola name; m = Mandinka name.

with herbal remedies. Table 4 shows that 13 plant species were also used in the village as medicine against illness caused by animal pests, such as nits, ringworm, worms, maggots, rats and termites.

The indigenous medical and therapeutic system in the village was two-tiered. First, there was a large inventory of widely used, readily available collective knowledge for treatment of common ailments, such as constipation, diarrhoea, and

Table 2. Animal medicine

Disease	Symptoms	Cure/remedy
<i>Religious</i> Charrow/Baddeh (F)	Diarrhoea with blood. Can affect any animal	Read a verse from the Koran or write a verse on a piece of paper and put the paper in the animals drinking water. The animal must be near a well or in the forest. A fortunate animal will recover
<i>Physical</i> Besungue (F) Rinderpest?	Tongue lies flat on the lower jaw and the eyes enter the sockets. Only calves contract this disease. Black blood is found under the tongue. The calf cannot suck milk from its mother	Put a needle through the black blood clot on tongue to release the blood. Continue to make the cut right to the back of tongue muscle. Put salt in mouth to wash it clean. Take fresh salt to fill the hole made by the needle. Two days later heat an iron and burn the end of the jaw. The salt enables the blood clot to be released, kills all the poison in the calves body and prevents infection
Darsue (F) Johnes disease	Hair stands erect on body but tail droops. Animal becomes weak and backbon protrudes from body. Animal eats well but excretes a lot, often with blood. The animal cannot walk properly. Effects only cows	Heat an iron and burn cow's back on either side of the backbone and parallel to it. Burn small slits at right angles to the back bone. On third day after burning cow will increase its food consumption and recover
Koril (F) Foot and mouth disease	One front leg and one back leg on opposite sides stiffen and the cow cannot move. A blister appears on both limbs. A serious disease that can be passed on to humans for whom it is fatal	The skin is split and black blood Foot and mouth removed from each of the affected limbs, curing the disease
Parf (F) Emphemeral fever?	The cow cannot walk but continues to eat. Disease common in the rains. Animals may have disease for up to month but it is not fatal	Once fresh rain falls on the cow it will start to recover. Rain water is collected and the cow is washed in it. After three days the cow will recover
Tolse (F) Tetanus?	Movement of lower joint and hoof of cow is restricted, followed by the back muscle and spine restriction. Fatal disease	Backbone is burnt at right angles with a hot iron
Ataie yarr sejarman	Severe goat diarrhoea	A cross is burnt on either side of animal
<i>Herbal</i> Besungue (F)	Severe goat diarrhoea	Outer bark of kafafee (<i>Corchorus olitorius</i>) pounded and water added and given to calf to drink immediately after birth before suckling
Damlow (F)	Cattle stomach pain. Non-fatal	Pound morlinkee (F) and fajaran (F) and add salt and water. Give to cattle to drink
Ehnyall	Cow has worms and insufficient salt in body	Pound roots of fajaran and morlinkee and leaves of butomborong (<i>Ziziphus mauritania</i>), wulo kono duto (<i>Cordyla africana</i>) and bufunuk (<i>Guiera senegalensis</i>). Add 25 kg of salt and 8 washing buckets of water. Give to cows before eating new grass. The mixture gives the cows enough salt to last a year. Important in places without a sea or river
Ataie yarr sejarman	Severe goat diarrhoea	Bark of wulo kono duto (<i>Cordyla africana</i>) stored in a bottle and given to goat to drink every morning. Alternative cure is bark of keedy (F) pounded, dried and mixed with milk for goats to drink
Ataie yarr seyarharr	Severe cow diarrhoea	Roots of fukem (<i>Acacia polyacantha</i>) stored in a bottle in water. Young cows given medicine to drink every morning
Gamuyeelen	To give bulls strength	Samentengo (<i>Passiflora foetida</i>) plant burnt and bull made to inhale the fumes
Ehleleyaner	Chicken illness. Chicken head twists backwards and chicken runs in circles	Fruit of buparpum (<i>Solanum indicium</i>) put in chicken's drinking dish
Ehsorhor	Maggots in animal sores	Leaves of bupemba (<i>Anthostema senegalense</i>) pounded and water added and put on sores

Disease	Symptoms	Cure/remedy
<i>Animal</i> Joffeh (F) Contagious bovine pleuropneumonia?	In early morning the cows' hair stands erect. Mucus runs from the nose and cow has trouble breathing	Cow must be killed immediately and the lungs removed which will be swollen with blisters and covered with clotted blood. A slit must be cut in the nose of every cow in the herd and a slither of lung inserted into the cut. The disease is thus transmitted to the whole herd at the same time, thus gaining immunity

F = Fula name.
(Source: Momodou Jah and Samba Bah, 1989.)

fever. Secondly, there was a specialised system of knowledge administered by medicinal practitioners to treat less common illnesses. From the outset, however, it must be stated that there was much overlap and interchange between the two tiers.

Common medicinal knowledge

The important role of diagnosis and therapy of disease by a large proportion of the population is

often obscured by studies of indigenous health care focusing only on local specialists. *Table 1* therefore provides a summary of common medicinal knowledge. However, it is important to note that this knowledge was not known to the same extent by all people in the village. Messer (1978, p. 144) stated that it was old women who were the main repositories of medicinal knowledge. Although in these investigations this was found to be so, there were also other groups of women

Table 3. Medicinal uses of animals

Species	Disease/symptoms	Remedy
Boa Constrictor. Yeeah	General illness	Fat used (preparation unknown)
Dolphin. Erungafal	Children with frequent illness	Fat found around the brain given to patient to eat
Fox. Gagargal	Pneumonia	Kill a fox, cook and give to the patient to eat. Tie a piece of tail on a string around the patients neck
Goat. Ehjarmen	Pneumonia	Drink goat's milk and rub the milk on the body
Goat. Ehjarmen	Eye problems. The patient can see in the day but not at night	Take patient into a room with no windows. The door should be closed all day and all night. The meat and liver of the goat should be eaten for one week. The patient may only leave the house to shower and toilet. After one week the patient will be cured
Goat. Ehjarmen	Snake bites	Drink blood
Hen. Ehfarra	Blood in urine	Cook the fowl with milk processed into oil and the roots of busayeat (<i>Cassia sieberiana</i>) and geebungeefarra (<i>Cassia occidentalis</i>). The patient should eat the whole animal and the sauce the fowl was cooked in. If the patient is a man, he should eat the fowl in the presence of a woman. Then bury the bones
Hen. Ehfarra	Yellow fever	The leaves or roots of bupokhende (<i>Terminalia albidia</i>) boiled and water retained. A five month old chicken is cooked in this water. Eat fowl and stew.
Hyena. Ehmungdongo	Frequent illness, fever, body pain, headache and diarrhoea	The meat is used (preparation unknown)
Lizard. Gajinda	Whopping cough	Boil the lizard in water and drink the water
Pigeon. Ehmungorh	Hiccups	The leaves or roots of bupokhende (<i>Terminalia albidia</i>) are boiled and the water saved. Pound fresh roasted groundnuts and add water. Kill the pigeon and cook meat in the groundnut sauce. Eat whole pigeon and sauce
Porcupine. Fusangnyell	Old sores (over two years)	The Quills burnt into ash and sprinkled onto sore
Puff adder. Bullakeem	Joint pain	Fat melted in tin and rubbed on painful joints
Red monkey. Gajeb	To make jujus	Skin used to make jujus
Snake. Enap	Hip pain	Boil fat of snake and eat
Wild pig. Ehyumbaehrama	Body fever	Boil meat and give to patient to eat.

(Source: Mallang Kumba Badjie, Momodou Jah, Samba Bah, 'Ayet' Jatta and Mallanding Sanyang, 1989).

Table 4. Medicine to cure animal pests

Species	Part used	Cure/remedy
<i>Adansonia digitata</i>	Leaf	Pound and mix into a paste with water and use as a shampoo to get rid of nits
<i>Cassia sieberiana</i>	Seed	Fish poison
	Root	To cure ringworm
<i>Combretum paniculatum</i>	Root	To get rid of worms. Wash and clean roots. Store in water for 16 hours and the worms are excreted when the water is drunk
<i>Elaeis guineensis</i>	Male flower	Burn and they repel mosquitos
<i>Hannoa undulate</i>	Bark	Snake bite
<i>Hyptis suaveolens</i>	Fresh stalk	Acts as a mosquito repellent
<i>Icacina senegalensis</i>	Leaf	Snake bite
<i>Khaya senegalensis</i>	Bark	Dry, pound and add to stored groundnuts. It acts as a preservative by preventing maggots eating the nuts
	Bark	To get rid of worms
<i>Lippia multiflora</i>	Flower	Dry and pound and add to stored food. Acts as a preservative by preventing the maggots eating the nuts
	Leaf	Store in water for 24 hours and use as an insect repellent for fruit and vegetable nurseries
<i>Manihot esculenta</i>	Leaf	Dried and used as rat poison
<i>Mitragyna inermis</i>	Leaf	Snake bite
<i>Parinari macrophylla</i>	Leaf	Termite repellent
<i>Tapinanthus bangwensis</i>	Leaf	To get rid of worms

(Source: Ansu Badjie, Mallanding Badjie, Mallang Kumba Badjie, 'Ayet' Jatta, Binta Jatta, Mallanding Sanyang, Nyorita Sanyang, 1988.)

who recalled a rich body of medicinal knowledge, such as women with responsibility for many children and women in poor households. These women had to provide health care for their dependent family and often could not afford the more expensive biomedicine, explaining their reliance on indigenous cures.

Wealth, age and ethnicity also played a role in the retention of indigenous medicinal knowledge. People from rich households knew little about such remedies, possibly because indigenous cures were commonly considered 'backward' and, given the choice, rich households chose to increase their prestige by using biomedicine. To admit to using indigenous remedies would have diminished their social status. Also, if people from rich households had been using biomedicine for a long period they may have forgotten many indigenous cures. Young unmarried people had only limited knowledge of indigenous remedies. Young individuals wanted to be 'modern' and this included using biomedicine; they had been taught little about indigenous medicine by their parents and were discouraged from using it by biomedical practitioners. Additionally, certain ethnic groups were believed to specialise in certain types of medicine, such as maraboutic cures by the Mandinka, bone setting by the Jola, and animal medicine by the Fula. Clearly, then, even

supposedly widespread medicinal knowledge was differentiated according to gender, age, wealth and ethnic group.

Specialised medicinal knowledge

The second form of medicinal health care consisted of the specialised system of medicinal knowledge. This knowledge was often kept secret and only passed on through formal mechanisms, such as to the oldest son or daughter, through apprenticeship, or was believed to be gained through communication with the 'spirits'. The medicine usually cured more serious diseases, incurable by non-specialists. This more specialised system included medicinal therapies supplied by herbalists, herdsman, hunters, midwives, **marabouts** and the custodians of shrines.

Herbalists (**amori**) were considered as being either formal or informal. The formal herbalists learnt their information under an apprenticeship system and were taught, and often practised, away from their home village. This appeared to increase their status in the village in which they resided. Certain individuals were said to have special herbal knowledge, passed on by the family, which could apparently activate certain medicine. Reputations as informal herbalists thus also developed.

Village herdsman (**ah-hawa**) had specialised knowledge concerning veterinary medicine and animals used for medicine. In The Gambia, the traditional cattle herdsman usually originated from the Fula ethnic group and had learnt their specialised knowledge of veterinary medicine from their fathers. As such, there was no formal medicinal training. *Table 2* gives details of the herdsman's ethnoveterinary practice in the village. Research elsewhere (McCorkle and Mathias-Mundy, 1992) documents parallel practices among other livestock owners in Africa and suggests the scientific rationale behind ethnoveterinary medicine. For example, salt and urine are sterile materials, thus useful as disinfectants for pharmacology and surgery; bloodletting serves to produce localised stimulation of immune and haematogenic systems; infected lung tissue placed in nostrils of livestock is an effective vaccination against bovine pleuro-pneumonia.

The hunters (**ahweema**) were a third group of important medicinal specialists¹¹. The important role that hunters play in the spiritual welfare of African populations has been clearly shown, for example by Marks (1977). However, less clearly understood has been the role of hunters in ensuring the physical welfare of village populations, although Turner (1968) is an exception. Amongst the Jola, hunters usually left their home village for an apprenticeship of up to 10 years. The prospective hunters learnt how to hunt, a skill used in combination with medicinal cures, particularly for illnesses resulting from close contact with animals. Hunters' remedies involved cures for snake bites, animal repellents and child cures, such as when young babies temporarily stopped breathing (*Table 3*). The medicinal cures involved learning verses (**soras**) from the Koran, in combination with herbal remedies. If an individual killed an animal, particularly an 'evil' one, and did not know the correct verses or herbal remedies to 'neutralise' the power of the animal's spirit, it was stated by the villagers that the person would die. For example, if an antelope's hair stood on end when it was shot or if the saliva of a dying animal touched a hunter, it was said that he would fall ill unless treated. It was the **ahweema** who could cure such afflictions. The hunters employed strict regulatory controls on using medicine. A hunter would never give all members of one family the same medicine since "...the medicine would not work for the children". There was appreciation of the concept of immunity from active plant ingredients by extended use of medicine over years.

The fourth medicinal specialist was the midwife (**ahjogar gukonya nganogen**), usually old women who had specialised knowledge on fertility-regulating medicine, pregnancy, childbirth and common child ailments. This was one highly

secretive and specialised source of knowledge available only to old women with surviving children. Control to the secrets of procreation was vital to the women's position and through it they retained power and influence 'behind the scenes'. Women's role in medicine in Africa has been examined in detail by Ebin (1982) in Ghana, Maclean (1982) in Nigeria and by MacCormack (1982) in Sierra Leone.

Marabouts were commonly consulted in the village for medicinal purposes to assess the nature of disease affliction, particularly if thought to be the result of witchcraft. **Marabouts** were believed to have the power to make **jujus** or **nasso**. **Nasso** was holy water made by washing verses from the Koran written in soot on a flat slab of wood into a bottle sometimes containing animal or herbal medicine. **Nasso** was used more commonly than **jujus** since it only had to be drunk once to give protection for life. **Nasso** was used to give one children, make one popular or to prevent illness. **Jujus** were amulets formed by wrapping verses from the Koran in leather and attaching them to a particular part of the body, such as the knee or the ankle. **Jujus** were used in a more preventative health care role, being employed to prevent bad luck due to spirits and witchcraft. They were often used in combination with herbal remedies. Most people wore **jujus** constantly and washed regularly in **nasso**, but special **jujus** were constructed for particularly severe or long-term illness, or problems of a psychological nature. This form of medicinal health care does not appear to be declining. The young 'modern' men took the preparation and use of **jujus** in football matches most seriously. **Jujus** were used as protection against bad luck wished upon the team by their opponents.

A final form of indigenous health care was the use of spirit shrines (**enarte**). These were kept to prevent illness from evil spirits and to discourage stealing. The shrines were passed on through family lineages, each shrine having its own owner, usually an old woman, who acted as a medium between the shrine and human beings. Certain shrines had the ability to cause illness if their social rules were disobeyed. Each shrine produced a particular illness or affliction, such as small body sores, diarrhoea or a sore throat. To cure the illness the shrine had to be appeased, which usually involved a small remuneration and the use of the specific herbal remedy needed to cure the affliction. Often the fear of such illnesses was enough to discourage socially harmful behaviour.

The indigenous health care system of the Jola was therefore complex, involving several fields of care consisting of both cure and prevention, material and spiritual beliefs and a variety of different practices. A particularly important role

was played by herbal remedies and the discussion below focuses on their use in the particular cultural context of the Jola of The Gambia. Among the Jola, the forest is seen as vital to life, owing to the healing property of trees, showing the significance attributed to herbal pharmacopoeia in Jola cosmology.

Discussion of herbal medicine

Several important themes emerged from an analysis of herbal medicine. These are discussed below since they illustrate that the ways in which herbal medicine is made and used in local contexts may have been misunderstood, thus explaining why indigenous medicine may have been assigned a low value in relation to biomedicine and why appreciation of its significance is only recently emerging.

First, the importance of combinations of plants (or plants and animals) used therapeutically emerged. The therapeutic effect of herbal medicine was the result of mixtures in which whole plants, or parts of plants, were prepared and taken in combination or sequence. For instance, in the village some plant species required the presence of other species to activate or neutralise the mixture, or to vary the strength of the medicine, or to act as 'inert' constituents. Little work has been done on this aspect of herbalism, although Hikino *et al.* (1977) acknowledged the importance of preparation methods in assessing herbal medicine, observing that the toxicity of *Aconitum* spp., previously thought to outweigh any therapeutic value, was reduced 100-fold by local methods of preparation. Additionally, among the Jola it was believed that diseases developed sequentially. The progression of symptoms was thus a requisite of the healing process and at each stage in the illness a new medicine or new form of medicine was used. Illnesses were also often linked to more than one cause, resulting in the use of more than one kind of medicine. This sequential and multiple mode nature of medicine may appear disorganised to the untrained eye. It is essential that when herbal medicine is tested for efficacy it is done so in its correct combination and sequence, which may only be possible in the field setting.

A second factor that emerged was that methods of preparation, including dosage, state of ingredients and timing were also essential in understanding the therapeutic value of herbal remedies. According to Hallam (1979, p. 100): "The effectiveness of bush medicine is a rather hit and miss affair depending on the time of year and dilution administered to the patient". Practitioners of European biomedicine, whose style of application is dosage-specific, have found it difficult to understand the non-specific nature

of the dosages of much herbal pharmacopoeia. What has apparently not been realized is that specific dosages are often unnecessary for most herbal medicine is prepared by mixing with water, resulting in a dilution of the active ingredients. Moreover, when dosage was important, it was carefully measured using locally fixed amounts, such as tea glasses or washing buckets. These measurements probably appear haphazard to the outsider, but they do remain constant. Furthermore, cross-checks were commonly carried out to assess the successful preparation of the medicine, such as "...if the medicine is good, a scum will form when mixed with water". Dosage was also administered carefully according to individual requirement (age, sex, build of person or animal).

The state of the medicine was also important. Methods of preparation commonly described the state of the ingredient (for example, dry, fresh, unopened), and the specific part needed (for example, "discard outer bark; ...use bark found in the middle of the tree, not at the top or bottom; ...use fresh bark because in dry bark the medicine has been used by the sun"). It was commonly believed by the villagers that the 'blood' (sap) of the plant contained the medicine. As such, it was perceived that by absorbing the sap the patient was taking in some of the tree's own healing properties. For example, it was stated that ingestion of the sap of **buhangken** (*Pilostigma thonningii*) discouraged evil spirits because the 'blood' of the tree repelled them. Timing was another factor often unappreciated in the preparation of herbal medicine. April to May was considered the best time to collect bark since it was believed that during the rest of the year the tree was 'full of water', which diluted the sap. Roots and bark were collected at mid-day for this reason but leaves were collected early in the morning before being dried by the sun. Specific time limits were imposed on the period of activity of the medicine. Most medicine was only used for three days after initial preparation. Time limits were also placed on the effectiveness of the medicine and if a reasonable health improvement had not been made within the allocated time limit, different for each illness, an alternative cure would be sought. This was especially important for children's medicine. It was appreciated that children were more vulnerable than adults.

Thirdly, the importance of the role of food as medicine and medicine as food became increasingly clear as the research progressed. It was frequently stated by the villagers that: "Medicine is also food because if you don't take medicine you will die". When women were interviewed as to the way in which food was 'good' for them, they commonly replied in medicinal terms, for

example "...tea is good to prevent chest pain". The separation of food and medicine into distinct categories is an artifact of European 'scientific' specialisation and may be inappropriate in the African context; rather, research should focus on the multicontextual use of plants. Studies elsewhere have also indicated that food often has an important role to play in preventative health care. Etkin and Ross (1982) noted that of 107 plants commonly used by the Hausa as gastrointestinal medicine, 53 species were also dietary constituents. Iwu (1986) also indicated that the use of plants, animal or inorganic substances for nutrition, cure and prevention of disease could not be separated by Igbo ideology. A further point to note is that the preventative or therapeutic role of food and medicine has been obscured by the scientific approach in an attempt to discover wonder cures, especially for serious or fatal diseases. In the village, medicine and food were also often taken for the sole purpose of preventing ill-health, a practice also undertaken in Nigeria (Abosede and Akesode, 1986).

The fourth observation is that beliefs concerning herbal medicine are important and deserve greater research attention. In the village medicine was thought to have physical properties commensurate with its healing power, often portrayed as an opposite. Fever was commonly cured by washing and medicine used to "cool the body down". In a similar manner, colours were often said to represent properties of the medicine. Red bark and other brightly coloured medicine was considered dangerous, for example, the bark of **buhangken** (*Pilostigma thonningii*) was believed to be dangerous; research has shown that it is hallucinogenic if consumed. Internal gastroenteric problems such as diarrhoea and constipation were usually cured by the ingestion of medicine to "flush the body out". Such perceptible evidence of the disease leaving the body has also been found by Etkin and Ross (1982) among the Hausa of Nigeria where the preferred plants used for the treatment of gastrointestinal disorders were those that exerted a diuretic or laxative activity.

Fifthly, the research also indicated that ritual played an integral role in the preparation of medicine, especially by medicinal specialists. Ritual in medicine has sometimes been portrayed as a socially constructed form of irrational behaviour by outside observers (Sempebwa, 1983). However, according to La Fontaine (1985, p. 12), ritual action is not irrational but purposive and its success or failure cannot be measured in Western scientific terms: each type of ritual represented a storehouse of traditional knowledge. Observers are beginning to understand the important practical rationale underlying ritualistic behaviour. For example, using only bark taken

from the east and west of a tree in the village may not merely be a socially constructed behaviour pattern but may be an observed fact passed down through generations that this bark shows greater chemical activity than the north and south bark which may be a result of the heat of the sun activating or destroying chemical constituents in the bark. Preparation of some herbal remedies stipulated that the medicine should not be put onto the floor at any time during its preparation or use. Rather than irrational ritual, by placing the medicine onto the floor the container may have absorbed heat from the ground which might have then altered the chemical constituents in the medicine. These above examples are speculative but it is important to rationalise behaviour patterns while not denying the role of ritual in the sanctification of medicine, especially for medicinal specialists.

This discussion has highlighted a few examples of why the efficacy and value of herbal remedies may have received little acclaim in the past. Trying to understand herbal remedies through a Western scientific 'filter' will only provide a limited comprehension of their value in the local context. A culturally informed perspective that provides an appreciation of local indigenous beliefs and knowledge, and medicinal preparation in context, is essential to gain an understanding of health and medicine from an African-centred vision. Clearly, however, herbal remedies are not the only form of medicine used by the Jola in The Gambia: biomedicine is playing an increasingly significant role. The health care system of the Jola is thus not fixed but subject to fluidity and change. In the final section the interaction between indigenous medicine and biomedicine is examined, highlighting that any culturally informed perspective must also be embedded within a political economy approach which seeks to understand the unequal global power relations involved in the creation and use of particular health care systems in specific places by different groups of people.

Interaction of indigenous medicine and biomedicines¹²

There has been a shift from using indigenous remedies to using biomedicine in The Gambia. According to Professor Nina Etkin (personal communication): "It is most commonly the case...that biomedicine eventually, and sometimes quite rapidly, supplants its indigenous counterparts, sometimes having gained an exaggerated status incommensurate with its efficacy and/or range of applicability". In addition to indigenous cures, a combination of diverse biomedical sources were used in the case study village. These

included medicine from a primary village health care service supported by the government, a travelling Caritas nurse, basic pharmaceuticals from the village shop, a free clinic at Marakissa, the government sponsored clinic in Gunjur (the local town), the pharmacy in Gunjur and, less commonly, the hospitals in the main towns of Serrekunda and Banjul. Medicinal beliefs and practices were therefore flexible, indigenous medicine being used in parallel with biomedicine.

The choice of the type of health care used in the village depended on individual preferences and constraints. Accessibility played a significant role influencing the type of medicine used. As the distance of the health care facility increased, so the uptake of that particular facility decreased. Distances of up to 10 km were commonly walked to clinics and pharmacies if the illness was not too severe. The cost of bus fares acted as a constraint; for this reason many individuals preferred to use the travelling nurse who came to the village every 2 weeks. The free clinic in Marakissa would have been more popular but its distance was restrictive. Also, it was a Catholic funded clinic and hence some of the Muslims did not feel that they could use the facilities. People who were too ill to walk and could not afford transport costs relied on indigenous cures or the travelling nurse.

Seasonality was an important factor in decision-making concerning the form of health care selected, particularly during the rainy season. During the rainy season the nurse was prevented from reaching the village due to inaccessible roads; this difficulty was compounded by the suspension of local bus services. Thus, the nearest source of biomedicine was the local town which was 6 km distance on foot on a badly-kept dust track which quickly became inaccessible during the rains. Therefore, the most commonly used medicines in the village during the rainy season were indigenous remedies. If these were not known, or if a specialist medical practitioner could not be afforded, then over-the-counter pharmaceuticals from the village shop were purchased. The limited use of biomedicine during the rainy season has been noted elsewhere in West Africa, such as in Burkina Faso owing to restricted cash supply (Sauerborn *et al.*, 1996).

The type of remedy used in the village also depended on the perception of the illness. Common illnesses such as sores, colds, ring worm and sore throats were treated by herbal remedies as well as more serious diseases thought to be incurable by biomedicine, such as certain medicine for pregnancy and yellow fever. Additionally, if local cures did not work for some illnesses, for example, fever or diarrhoea, then an alternative biomedicine was sought.

Decision-making on the type of medicine used was flexible. Biomedicine was used for illnesses that local remedies could not cure, such as toothache, headache and eye trouble or serious illnesses such as infection from a rusty iron implement (tetanus) and a severe pain in the side of the abdomen (appendicitis). The hospitals were used for serious cases or only as a last resort for it was stated that individuals did not return from the hospital alive or were asked to leave the hospital before properly cured because they could not afford to pay the cost of medicine. Perceptions of the success rates of particular types of treatment were therefore important variables affecting the balance of utilisation of indigenous medicine or biomedicine. A major difficulty in combining the two forms of health care was that if the indigenous remedy was not successful, the patient might resort to biomedicine, and vice versa. This could result in the patient receiving two dosages of the same active ingredients, but in different forms, and possibly increasing the potential of over-dosing.

Financial circumstances affected the balance of medicine used. Often poorer individuals could not afford biomedicine, even if they wished to use it. For those that could afford biomedical cures, individuals tended to choose the travelling nurse since her medicine was the cheapest (1 dalasi)¹³. When the nurse was not available most individuals would visit the pharmacies where untrained staff administered over-the-counter pills and injections, rather than visit the government clinics with trained personnel, owing to the greater cost of the clinics. Also, the local government clinic was organised by Mandinka and the Jola preferred to go to a pharmacy run by a fellow Jola since it was stated that the Mandinka teased them about using herbal remedies. The popularity of pharmacies compared to the clinics had serious, often detrimental, health impacts (Trostle, 1996). Mothers would sprinkle antibiotics directly onto their child's body-sores rather than administering them orally owing to lack of advice from pharmacy staff¹⁴. Pregnant women took dangerous drugs, and painful arm infections were noted on children after injections from hypodermic needles. Some individuals were experiencing and realising the harmful effects of over-use of biomedicine: "Pills and injections are harmful if you take too much or too often. Herbal remedies can't be harmful because people have been taking roots and leaves since the beginning of time". One old village woman who had lived in the Casamance as a child, where the integration of Western health care based on biomedicine had arrived earlier than in The Gambia, and who had been given many pills and injections as a child, found her body no longer responded to medical treatment: "I have taken

too many pills and injections so local medicine won't work on my body any longer".

Older individuals often preferred indigenous medicine because it was cheap, readily available and was observed to cure common conditions. However, the limitations of indigenous remedies were also realized for individuals stated that illnesses were detected through symptoms but some illnesses had the same symptoms and so occasionally the wrong medicine was administered. In contrast, young individuals preferred 'modern' medicine which did not need any processing, preparation or collecting. They believed that: "There is no illness that biomedicine cannot cure". Furthermore, young people often did not have the knowledge to cure themselves; they were more dependent on outside governmental and NGO organisations to cure their health problems and spent considerable income to this end. There were a few young individuals who took an active interest in indigenous medicine but they had parents who were specialised medicinal practitioners. Possibly in the future widely known local cures will be lost but specialist knowledge, and thus latent power, will remain?

Indigenous medicine thus has both potentials and limitations in its use. It is cheaper than biomedicine, is widely available to most of the local population and can be used to treat a broad spectrum of illnesses. Also, the time taken to consult an indigenous practitioner is often longer and more 'personalised' than that of a doctor based on biomedicine. Local practitioners have 'expert' knowledge of particular village communities and the specific patterns of disease and illness located among different groups of people at different times of the year; they are also generally adaptive, open to innovation and responsive to referral of serious illnesses to biomedical facilities. Furthermore, indigenous medicine is part of African people's socio-cultural life and is an important factor promoting social cohesion, cultural continuity and positive psychological well-being. One of the most valid arguments against the use of indigenous medicine is the lack of scientific proof of its efficacy. Fortunately, this viewpoint is steadily changing and efforts are now being made to investigate the use of indigenous cures, paying attention to specific methods of preparation and local cultural beliefs. Another shortcoming of indigenous medicine can be the imprecise diagnosis given by local practitioners; for example, stomach pain could imply indigestion, ulcer infection or cancer of the stomach, resulting in misapplication of indigenous medicine which treats symptoms rather than relying on a specific diagnosis. Finally, it must also be acknowledged that some indigenous beliefs and practices may be harmful to humans and that the

length and quality of training of local practitioners varies greatly.

Although indigenous medicine has many advantages it is gradually being replaced by biomedicine among the Jola of The Gambia. One young male villager noted: "Food production has declined, leading to poor nutrition, so health care has increased. People use pills and injections more than herbal medicine because everyone is told to use the health centre from pregnancy for the rest of the child's life. People think that injections are best because they help them to recover quickly. Also, people still believe that white people know more than black people and so they use their medicine". Scientific biomedicine, with its long history of intervention in The Gambia, has developed into a "medical cultural hegemony"; it is a pervasive and wide-spread belief among the Jola of The Gambia that biomedicine is superior to indigenous medicine.

Replacing indigenous knowledge by scientific specialisation is also related to the government's policy on health care. In August 1988 the Gambian government privatised the health service as part of the Economic Recovery Programme promoted by the International Monetary Fund and the World Bank. The price of government health care facilities subsequently leapt, a feature common throughout Africa (Asthana, 1994). Before these changes, hospital treatment had been cost free in The Gambia although the patient paid for the medicine. After privatisation, a 50 dalasi charge each week was placed on use of hospital facilities, combined with increased price of medicine, clearly putting such treatment out of the reach of most of the local population. Mother and child health care, previously free, also had charges imposed. Women were required to pay 30 dalasi to have their child delivered in the local clinic if they stayed overnight and 5 dalasi to have their children weighed. Such action resulted in three main alterations in the form of health care used. First, individuals who used biomedicine shifted from more expensive forms of clinic and hospital medicine to cheaper over-the-counter medicine of the untrained pharmacists and shopkeepers. Secondly, participation at distant free clinics increased. Thirdly, poorer individuals drifted back to using indigenous remedies wherever possible, but when questioned many of them stated that their lack of knowledge of indigenous cures was a constraint.

Clearly, then, any understanding of local health care patterns must be contextualised within existing economic and political conditions. This is particularly the case in The Gambia. Having maintained a multiparty system for the three decades since independence, Sir Dawada Jawara was ousted in a coup by young army

lieutenants in July 1994 (Wiseman and Vidler, 1995). The county has since been under military rule led by Colonel Yahya Jammeh who has been supported by many Gambians owing to his anti-corruption drive (De Costa, 1995). In September 1996 Jammeh was democratically elected president of the APRC (Alliance for Patriotic Re-orientation and Construction). According to Secka (1996, p. 1640) one reason for his election as president was his excellent record in the health and education field, especially in rural areas. Payment for government health care has been fixed at 5 dalasi a ticket, while payment for the travelling nurse has risen slightly to 6 dalasi (including medicine). Certain common diseases and illnesses have been targeted for investigation, in conjunction with the Medical Research Council; these include cataracts, child nutrition and malarial control. The government is also currently attempting to set up **kabeloos** or primary health care in rural villages. Rural villagers are using government sponsored health clinics more commonly now than individually-run pharmacies (many of which have been closed as they were being run by non-qualified staff). The clinics are believed to be better stocked in important medicine and medical personnel from Cuba, Egypt and Nigeria have increased in number. The perception of rural Jola is that the health system has improved with the 'new' government. It remains to be seen if these policies can be maintained, particularly if international financial and technical support which was suspended during the political instability is not renewed.

Conclusions

Global power relations play themselves out in the form of political and economic policies which structure health care. Practices at the local level are therefore influenced by the interplay of global forces and local perceptions and needs (Gort, 1989). Additionally, global power relations operate in relation to the creation of hegemonic ideologies and discourses. The introduction of scientific biomedicine in The Gambia was based upon the assumption of universal applicability. The rules of Western 'science' were believed to be all embracing which gave little 'room-for-manoevre' for specific cultural interpretations of health and medicine. This hegemony of Western scientific discourse was established during the colonial period. Health issues were used by the colonists as a means of spreading or exhorting control and as an intervention which represented 'progress' towards a more 'civilised' social and environmental order. Although the negative health consequences of European presence were sometimes recognized (as in the case of venereal

disease), medicine was taken as a prime example of the constructive and beneficial effects of colonial rule and was used as one of its most indisputable claims to legitimacy. Lyautey, the leading exponent of military medicine as an aid to establishing French power in Africa, went as far as to proclaim that "La seule excuse de la colonisation c'est le medecin" (Arnold, 1988, p. 3).

The hegemony of biomedicine is still evident today in The Gambia. Biomedicine has become a major institution in The Gambia in which people are increasingly becoming dependent on the 'cult of the expert' and ideological definitions of health and illness based on a Western scientific model, although this model may be 'translated' within local cosmologies (Gursoy, 1996). In the face of foreign-exchange shortages and declining international support, dependence on biomedicine is a dangerous strategy for The Gambia to pursue¹⁵. Many indigenous remedies can be as effective and much cheaper, more accessible and easily understood by local populations than their biomedical counterparts. Hence a strategy combining the two medical traditions in parallel has the best potential to improve the curative and preventative health care of The Gambian population. However, despite the significant role that indigenous medicine has played, and continues to play, in structuring health care in the country, research and development still focuses on biomedicine and biomedical understandings of health and illness. Hopefully this paper can go some way towards addressing this imbalance, through its call for more encompassing concepts of medicine based on indigenous cultural development and through the provision of detailed data sets outlining various forms of indigenous medicine used by the Jola.

Support must be given to research and policies that develop beneficial links between indigenous medicine and biomedicine to provide improved material outcomes for the people of The Gambia, a country suffering from poor health indicators. Some examples include: indigenous practitioners should be consulted to determine how/if the advantages of biomedicine can be incorporated into indigenous health care beliefs; practitioners should be trained in the basic concepts and methods of biomedical practice; the site-specific body of common and specialist indigenous knowledge, and associated plant and animal species and specific preparation methods should be recorded; laboratory and clinical screening of pharmacological activity and effectiveness of indigenous remedies needs to be assessed; scientists and practitioners should work together to understand, test and enhance indigenous treatments through on-farm field testing in which the indigenous treatments are not allocated an inferior role to biomedical treatments;

proven indigenous remedies should be incorporated into formal medical curricula and outreach programmes for students and professional in the field; finally, proven indigenous cures should also be 'validated' through the education system and common knowledge passed on to rural individuals before it becomes 'lost'. The ultimate aim of any health care strategy should be to increase people's control over the improvement of their health and towards achieving this aim, indigenous health care is worthy of greater respect in biomedical discourses and practice.

Finally, this case study demonstrates that the therapeutic landscape of the Jola is a product of changing social and material circumstances which interact at a variety of scales (e.g., current globalisation processes resulting in Structural Adjustment Policies, geopolitical regional change, dominant discourses of health and medicine articulated through the scientific establishment, national government policy, international aid relations, changing social relations owing to rural-urban migration, alterations in generational-based knowledge systems etc.). Health care systems do not simply develop in response to particular cultural practices embedded in particular places by particular groups of people, but they also develop in the context of unequal political and economic realities. New cultural approaches (Gesler, 1992; Gyapong *et al.*, 1996) and lay perceptions (Poland, 1993; Lerer *et al.*, 1995) must therefore be combined within a political economy framework to stress the dynamism involved in health care. The progress for research therefore lies in the broader contextualisation of medical pluralism which is sensitive to the socio-economic and political context of health and disease (Dauskardt, 1990; Barrett and Browne, 1992). It is not, therefore, adequate for 'population health' to focus on 'position in the social hierarchy' (Hayes, 1996); rather, what is needed is a 'stratigraphic' analysis that examines the complex interactions between human actors and cultural/political/economic global hierarchies.

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Notes

¹The term therapeutic landscape is used to refer to the specific health care beliefs, practices and experiences of a particular group of people located in a specific place. This therapeutic landscape is an outcome of the interplay between specific cultural practices and unequal economic and political realities. As such, the term is employed rather differently than originally intended by Gesler (1992).

²Indigenous medicine refers to health beliefs and practices relating to disease and illness which are products of indigenous

cultural development. The term is synonymous with traditional, alternative, folk, unorthodox, or ethno medicine. Several different types of indigenous medicine exist including herbalism, midwifery and divination. Biomedicine is the term used in this discussion to refer to clinical medicine based on the principles of natural science. It is preferred to the terminologies 'modern', 'scientific' and 'Western' medicine: the term 'modern' medicine compared to traditional medicine tends to imply that biomedicine is innovative and indigenous medicine is stagnant; the term 'scientific' medicine implies that biomedicine is universally applicable rather than a reflection of a prevailing culture and a particular world view; and the term 'Western' suggests that this form of medicine only developed, and is practised, in the Western world.

³This process is, however, still incomplete in Europe. In the United Kingdom, for example, there are still strong beliefs in both 'white' and 'black' magic. In rural areas herbal remedies are used for common illnesses. Many diverse 'old wives tales' exist on fertility control. People offer prayers, blessings and vows when hospitalised for serious operations to help ensure a successful outcome. There is also an increased interest in alternative medicines, such as homeopathy, acupuncture, dowsing and crystals by certain groups in European society. Beliefs about medicine are thus complex and many people are moving towards more holistic beliefs and interpretations of health care in Europe. Similarly, in the African context experiences and practices surrounding indigenous medicine and biomedicine interfuse to form a complex pattern of health care beliefs. The discussion here, however, focuses on biomedicine in the European context and indigenous medicine in the African context since these systems of thought have dominated behaviour in these places to date. This false dichotomy has been created for ease of understanding. Later in the paper the interaction between the two medicinal modes is discussed.

⁴All Jola words are indicated in **bold**.

⁵Gambia National Archives Reference Number 2/1429.

⁶Despite lengthy investigations, botanical identification could not be verified for this specimen.

⁷The identity of the village is not revealed for reasons of confidentiality. Among the Jola several important terms exist: medicine is known as **bubearben**; to be physically sick, **ehmass**; to hurt, **ting-a-ting** or **ganugurr**; and a distinction is made between being ill, **bajuser**, and being seriously ill, **gasomut**.

⁸Verification of species was made by cross-checking with botanical manuals and local medical specialists. Unidentified plant specimens were collected and were later identified with the help of botany specialists at Kew Gardens, London. The data collected from this survey are recorded in *Table 1*.

⁹Names of the plant or animal species in Jola is in bold typeface, followed by the botanical name in italics.

¹⁰*Table 2* shows the ethnoveterinary therapies used in the village. It must be noted that the naming and classification of diseases in the village was undertaken according to their most salient symptoms. As a result, scientifically different diseases may be amalgamated together in this classification system. The matching of indigenous disease classifications with their corresponding scientific terms is therefore fraught with difficulties; hence the scientific naming of diseases in this table should be treated with caution, as indicated by the question marks.

¹¹The term hunter should not be confused with individuals who hunt. Anyone could hunt, using traps, dogs, smoking, guns, catapults, nets or sticks but it was only individuals with specialised medicinal knowledge, learnt away from their home village by apprenticeship, and with the ability to cure other hunters, who could be considered **ahweema**.

¹²The discussion focuses on human health care rather than ethnoveterinary practices owing to lack of data.

¹³The dalasi is the name of the local currency. At the time of research, 10 dalasi was equivalent to one pound.

¹⁴This is an interesting example. The herbal remedy for body sores was to sprinkle the dried pounded leaves of **buntart** (*Vernonia* sp.) onto the sore which formed a 'crust' or 'scab'

drying out the infection. Women 'translated' their indigenous knowledge onto the use of biomedicine; few herbal remedies for sores were taken orally. Other examples of the interpretation of biomedical notions within cultural beliefs may be found in Iyun and Tomson (1996) and Opala and Boillot (1996). The use of biomedicine does not therefore automatically mean that people change their beliefs about health. As Gesler (1991, p. 119) has noted, Western medicine and medical technology may be the attraction, rather than biomedical ideas.

¹⁵Gunaratne (1980, p. 119) has also noted that although there has been a marked increase in the number of pharmaceutical products marketed in the Third World there has been no correspondingly marked improvement in health. He noted that the drugs bill represented a sizeable proportion of the total health expenditure in many Third World countries. The drugs were purchased at exorbitant, and often inflated, costs from multinational companies who spent a disproportionately large amount on advertising in the Third World. This cost was eventually borne by the consumer. *Le Monde* recently reported that fake pharmaceuticals account for 60% of drugs sold in Africa (West Africa, 1996, p. 1706). Gesler (1994) has also noted that the dumping of drugs banned for sale in Europe, and the sale of inappropriate pharmaceuticals by multinational companies to African governments, is common practice.

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