"Ethnoveterinary knowledge in Sanaag region, Somaliland (Part I): notes on local descriptions of livestock diseases and parasites"

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Ethnoveterinary knowledge in Sanaag region, Somaliland (Part I): notes on local descriptions of livestock diseases and parasites

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Introduction

Sanaag region is an isolated semi-arid area of Somaliland[1] where pastoralism, in various forms, predominates. Following discussions with community elders in August 1991, VetAid/ ACTIONAID established an animal health programme in Sanaag in 1992. From the onset, the involvement of local pastoralists in the design and implementation of the programme was considered a priority. An essential part of this process was for programme staff to understand local perceptions of animal disease and avoid mistranslation of terms used by the pastoralists when sick livestock were described. For this a herders' dictionary for livestock ailments had to be formulated. The importance of veterinary ethnosemantics when working with pastoral groups is mentioned by Ibrahim *et al* (1983) for the Fulani, and is described in detail by Fre (1993) working with pastoralists in Eritrea and eastern Sudan. The extensive veterinary knowledge of Dinka cattle owners in south Sudan is described by Schwabe and Kuojok (1981).

Regarding livestock diseases in Somaliland, previous accounts have tended to simplify translations and use Somali words as synonyms for the English or scientific names (Mares 1954; Abdurahman and Bornstein, 1991; Dioli and Stimmelmayr 1992; Heuer 1993). By investigating the literal meaning and use of terms used in Sanaag in more detail, it was hoped that the programme would highlight the local knowledge of Somali herders in the region, and also, collect information relevant to the design of training exercises and extension material. Also, programme staff were aware that a failure to understand local knowledge on animal disease could contribute towards the recommendation of inappropriate disease control measures. The VetAid/ ACTIONAID programme aimed to prioritise animal health problems from the herders' viewpoint and develop the programme according to their needs and abilities.

The information presented in the notes was collected during visits to 21 sites in Sanaag region between March 1993 and January 1994, as part of the wider activities of the animal health programme during that period. Data were collected using informal semi-structured interviews and a variety of participatory rural appraisal techniques, including disease ranking exercises. Frequently, local descriptions of animal disease were compared with clinical and post mortem examinations of sick livestock at the vari-

ous sites, and basic laboratory tests were used when necessary. The notes also review some of the existing literature on animal disease in Somaliland and diseases of camels, and relate this information to herders' knowledge in Sanaag.

Information was also collected on local treatments for livestock disease and disease control strategies, including the use of herbal remedies. It is hoped that these data will be presented in a separate paper.

Notes on diseases

The Somali terms and words used to describe livestock illnesses are listed in alphabetical order, with a literal meaning. If no literal translation is provided, then that term or word was used only in relation to sick animals. A summary of terms is provided in Table I.

Table I.: Summary of terms used to describe livestock diseases and parasites by pastoralists in Sanaag.

oral problems
af-carro
af-ruur
boog
cabeeb
furuq
af-bakhti
af-burur
ilka-carro
calacuul
doobobarbar

sudden death
garir
kud
jaqle
bambam
cag salaah

abcesses or wounds
goo sato
qanjoole
qanjobarbar
waglal
mull
finduud
maco
shaf-daloolo
dhaleeco
garbo beel
dhobin gooyo
maho
mal

enteric problems
aadadh
baallalo
caal
cifasho
daab
dadadhiig
dabahawiye
dabakaruub
darato
fuure
hardhiig
shuban

systemic problems
dabakaruub
dhukaan
cudum cuud
garir
galab isboor
garabgoye
garabciid
gendi
humbul
qanjoole
qanjobarbar
shilin
joog

musculo-skeletal
cudum cuud
garabgoye
garabciid
shimber
galab isboor
gudaan
dhobin gooyo
mal
mud dilaac
seed xooran

respiratory problems
ah
calacuul
laxawgal
dhugato
oofmud
jibaax
sambab
sambab faraq
sangaale
hargab
dugub

udder problems
candhoole
amda hanun
candhobarbar
carar

parasites
gooryan
dhabijo
dhuug
dibeeche
dulan
faradheer
gabaarey
garabcad
garangoori
injir
shilin
shilincas
takar
qafane
qanayn
shilin madow

skin problems
cadho
cambaar
carro
dhabijo
dhaleeco
dibeeche
furuq
injir
ka bixid
shilin
xaqiiqito

eye problems
indo hanun
indojebiye

nervous problems
muglo
gubdo
shimber
dabaqdabaq

foot problems
boog
cabeeb
raaf dilaac
ragat

reproductive problems
dhalmo
dhicin
dhulwas
gale
godo welech
jabti
shadeedyo
mandheer noqoyo
faraarti
mandheer dhiig

poor body condition
aadadh
ashi
caal
dhukaan
gendi
suuqiye

aadadh: A word used to describe camels showing signs such as abdominal discomfort, regurgitation, diarrhoea, weight loss or poor body condition. *Aadadh* was associated with ingestion of the plants *yiboodac*, *qudhuume*, and *badanti*, and with worm infestation.

ah: This was an onomatopoeic word used to describe a coughing camel.

af-bakhti (literally, dead mouth): This term was used to describe a camel with unilateral paralysis of the facial nerve.

The lips on one side of the face were non-functional and food had accumulated in the mouth on the same side.

af-burur (literally, mouth pustules): This term may be used to describe lesions such as those caused by orf, camel pox or sheep and goat pox (see *af-ruur* and *boog*).

af-carro (literally, mouth to the ground/sand): *Af-carro* was considered by Mares (1954) to be a sign of trypanosomiasis in camels, when the head of a sick camel dropped to the ground. In Sanaag, *af-carro* was used to describe camels with oral lesions similar to those caused by orf, camelpox, or camel papillomatosis. Herders stated these lesions were as if sand has been rubbed into lips of affected animals (see also *af ruur*).

af ruur literally, mouth papillomas/granulomas: The word *ruur* referred to lesions resembling papillomas and granulomas, and its use was restricted to camels. The prefix *af* meant mouth. The lesions were said to be small, raised and numerous, and consisted of many small pieces. Such lesions can occur in camel pox, orf and camel papillomatosis, and are discussed in more detail under *furuq*.

amda hanun literally, breast pain: *Amda hanun* is one term which was used to describe animals with mastitis (see also *candhobarbar*, *candhoole* and *carar*).

ashi literally, home sickness: Used to describe non-specific ill health in animals which were being grazed in an unfamiliar area.

baallalo: This term referred to a digestive disturbance in animals and man, characterised by abdominal discomfort. Mares (1954) used *baallalo* as a synonym for rumenal tympany. Around Erigavo town, *baallalo* was used to describe a digestive disturbance in goats and cattle which was sometimes fatal and followed ingestion of *boqondhow* (sorghum regrowth). The plant *shuna shuna* (*Solanum nigrum*) was also reported to cause *baallalo*.

baargariish literally, shivering lamp: A disease of camels involving fever and rapid death. Mares (1954) thought that *baargariishe* was either trypanosomiasis or anthrax.

boog literally, a (skin) wound on a human or animal which takes a very long time to heal: The term *boog* was used to describe a variety of conditions causing abcessation or pus formation, as suggested by VetAid (1992). In particular, *boog* was used to describe footrot, abcessation of the foot and necrotic stomatitis. In small stock *boog* affecting the mouth was sometimes called *cabeeb* (see later). In camels the terms *af-carro* or *af-burur* were sometimes used to mean "*boog* affecting the mouth". *Boog* was also used to describe lameness in sheep and goats caused by infestation with *Hyalomma* ticks around the coronary band and between the claws. This form of lameness did not always involve a wound or abscess, and therefore another interpretation of *boog* could be "lameness in sheep and goats". In lameness cases it seemed that the lesions were one of three types:

- Well-defined abscesses on or around the coronary band, probably due to thorn injuries, though may also be secondary to tick attachment or injury.
- Moist diptheritic lesions between the claws, similar to lesions caused by *Bacteroides nodosus* and *Fusiformis necrophorum* infections.
- A cellulitis around the coronary band, sometimes extending proximally towards the knee and associated with tick attachment.

boog alool literally, "*boog*" of the stomach/abdomen: *Boog alool* described abcessation of abdominal viscera, such

as that caused by necrobacillosis.

caal literally, mucus: Although the literal meaning of *caal* was mucus, the word had a similar usage to the English description "wormy". Many herders recognised gastrointestinal worms during post mortem examinations conducted in the field and related these to *caal*. Animals with *caal* may show signs such as diarrhoea, weight loss, poor growth, submandibular oedema, or death. Sometimes the word *aadadh* was used to decribe "wormy" camels. The word *gooryan* was used to describe both roundworms and tapeworms.

cabeeb: This term was used to describe foot and mouth disease.

cadho: This term referred to a skin condition in camels with a clinical appearance identical to that caused by sarcoptic mange. All skin conditions in sheep and goats were called *cambaar* (see later).

cag salaah literally, rubbing the foot: This term described camels which pawed or stamped the ground during a severe and fatal illness of rapid onset. Informants claimed that the condition which gave rise to the sign of *cag salaah* had not been seen in the Sanaag for many years. Mares (1954) mentioned the expression *ag ku suulleh* and related the term specifically to trypanosomiasis. Hadrill (1992) related the term to camels with swollen feet.

calaacul literally, leech: These parasites attached to the oral cavity and proximal oesophagus of livestock.

cambaar literally, a bad sign: *Cambaar* was used to describe any skin condition of sheep and goats. In camels the word referred to lesions identical to those caused by ringworm. "Ringworm" is given as the English translation of *cambaar* by Abdurahman and Bornstein (1991) and Mares (1954). However, Mares also describes *cambaar cad* used for *"almost sub clinical"* sarcoptic mange in sheep and *cambaar madow*, an undiagnosed skin disease in sheep. For ringworm in camels Dioli and Stimmelmayr (1992) use the word *robi*. It is possible that in cases of ringworm, dermatophilosis and mange, lesions could arise which herders will call *cambaar*. In addition, *cambaar* was also used to describe a skin condition of sheep in which the hair on the back became dirty and encrusted.

candhobarbar literally, swollen udder: *Candhobarbar* was used to describe a hot, swollen udder such as that caused by acute mastitis.

candhoole literally, shrunken udder: *Candhoole* referred to an udder which was permanently damaged and unable to provide good quantities of milk. The term suggested chronicity and dysfunction.

carar: This was a burst abcess or infected wound on the udder.

carro: This referred to a condition in which numerous small lumps or nodules appeared suddenly on the skin of camels. The condition was similar to urticarial reactions in cattle described by Mares (1954).

cifasho: This described frothy bloat in livestock. Herders thought that the condition occurred when stock grazed grass with dew in the early morning.

cudum cuud literally, disabled forelegs: *Cudum cuud* was said to affect cattle only and caused a stiff gait, inappetance and sometimes recumbency. All cases recovered spontaneously after three to six days and herders responded to the problem by moving animals to a different area. The descriptions of this disease are suggestive of ephemeral fever (see also *galab isboor*).

daab: This term described diarrhoea in young ruminants and two forms were recognised. *Daab* canood referred to di-

arrhoea caused by over-ingestion of milk. *Daab geedood* referred to diarrhoea which occurred at the time when young stock began to graze.

dabaqdabaq: This word was used to describe a staggering or high-stepping gait. The British Veterinary Team (1972) mentioned the word *dabadaba* in association with heartwater, though the absence of *Amblyomma* ticks on livestock in Sanaag would prevent transmission of the disease in this area.

dabadhiig literally, bloody tail: The English translation of *dabadhiig* is dysentery (see also *hardhiig*).

dabahawiye literally, opening of the tail: This word was used to describe non-specific diarrhoea in camels.

dabakaruub: Herders used this term to mean rinderpest.

dafac: This term was used to describe any sickness in horses or donkeys.

darato: This was a condition of sheep and goats which resulted in diarrhoea, bloat, and sometimes death. Ingestion of new growth of certain grasses was said to cause the condition (see also *cifasho*).

dhabiijo literally, mites: Refer to *cadho* and *cambaar* for descriptions of mange.

dhaleeco literally, negative propaganda: *Dhaleeco* was used to describe a skin condition of camels involving open wounds, pus and localised skin swellings. Herders recognised that the disease was contagious, and *dhaleeco* meant camels with the condition would give their owner a bad name if they were allowed to mix with other camels. Peck (1939) used the word *dalehau* to describe contagious skin necrosis, a condition confirmed in Somaliland by Edelston and Pegram (1974).

Skin wounds similar to those of *dhaleeco* but which are not contagious were called *waglal*, or less frequently, *goo sato*. The synonyms for contagious skin necrosis maco (Abdurahman and Bornstein, 1991) and *maho* (Dioli and Stimmelmayr, 1992) were not used in Sanaag.

dhalmo literally, delivery/parturition: When appplied to sick livestock *dhalmo* referred to illnesses such as endometritis which occurred within a few days post partum. See also *mandheer noqosho*.

dhicis literally, abortion: See also *mandheer dhiig*.

dhiigla'aan literally, empty blood: A descriptive term applied to animals with pale mucus membranes, or to pale carcasses with watery blood. In English such cases would be described as anaemic.

dhobin gooyo literally, joint cut: *Dhobin gooyo* was used to describe animals with swollen joints (see also *mal*).

dhugato: This was a respiratory disease in camels which resulted in prolonged debilitation and required an extended recovery period. Dioli and Schwartz (1992) associated *dhugato* with severe production losses and abortion in camels. *Dhugato* has been translated as bronchitis (Hadrill, 1992) and pneumonia (Abdurahman and Bornstein, 1991).

dhukaan literally, chronically emaciated camel (Applied idiomatically to other animals or man): The English translation of *dhukaan* is usually given as trypanosomiasis due to *Trypanosoma evansi* (surra). Mares (1954) describes *dhukaan-cad* (literally, white *dhukaan*) and *dhukaan madow* (literally, black *dhukaan*) to signify mild and acute forms of the disease, although these terms were not in use in Sanaag. Other Somali words associated with trypanosomiasis were *gol* (Abdurahman and Bornstein, 1991; Heuer 1993), *gosha* (Heuer 1993) and for trypanosomiasis due to *Trypanosoma congolense* (tsetse-transmitted), *korbarbar* (Schwartz and Dioli,1992). Tsetse-trans-

mitted trypanosomiasis does not occur in Somaliland. See also *gendi* and *suuqiye*.

dhulwas literally, mating the ground: *Dhulwas* was used to describe male animals with enlarged testes. Brucellosis is a possible cause of *dhulwas* in sheep and goats.

dhuug literally, fly or insect

dibeeche literally, lice: *Dibeeche* was used to describe severe lice infestations in young lambs and kids. The condition was associated with *dhiigla'aan* (see above).

doobobarbar literally, swelling of the soft palate: *Doobobarbar* was used to describe injuries or disease of the soft palate of male camels. Abdurahman and Bornstein (1991) mention this term and propose that the problem is most likely to occur during rutting.

dulan literally, ectoparasite: *Dulan* was used to describe newly emerged tick larvae before they attached to a host.

faraati: This was used to describe the condition of vaginal and uterine prolapses.

faradheere literally, long fingured: *Faradheere* was the name used to describe long-legged ticks with a patterned body. These ticks were identified as *Amblyomma* species.

fin: This word was used to describe the small wounds caused by biting insects or tick attachment.

furuq: This word was used to describe conditions of camels, sheep and goats, the clinical appearances of which were similar to camel pox, and sheep and goat pox. For *furuq* in camels, the differential diagnoses would be camel pox, camel contagious ecthyma (orf) or camel papillomatosis. For *furuq* affecting sheep and goats, orf was the main differential diagnosis in Sanaag. Herders considered *furuq* to be prevented by vaccination and animals with the disease were not allowed to move near a well or mix with healthy animals.

fuure: This was a descriptive word meaning distension of the stomach or abdomen.

gafane literally, engorged adult female ticks of all species.

galab isboor literally, bending in the evening: This term referred to the hunched up appearance of sick cattle and was used as an alternative for *cudum cuud*.

garabcad literally, white shoulder: *Garabcad* was used to describe an adult tick with white shoulders. These ticks were identified as *Rhipicephalus pulchellus*.

garabciid literally, shoulder cut.

garabgoye literally, disease of the forequarter: *Garabgoye* and *garabciid* were used to describe sickness in cattle affecting one limb. The British Veterinary Team (1972) associated the term with the clostridial disease, blackquarter.

garangoori literally, unengorged ticks with striped legs and plain bodies: The name *garangoori* was used to describe adult *Hyalomma* ticks. The British Veterinary Team (1972) used the word *garangor* to mean both streptothricosis, *Amblyomma* ticks and *Hyalomma* ticks.

garbo beel literally, sickness at the withers: Camels with deep-seated draining abcesses at the withers were described as suffering from *garbo beel*.

gees literally, the horn of a goat or cow: *Gees* was used to describe injuries or infections at the base of the horns, which were often secondary to tick infestation.

gendi literally, tsetse fly: In Sanaag, *gendi* was used as an alternative term to *dhuukaan*. Tsetse flies are not found in Somaliland.

godowaleh literally, inside widening: *Godowaleh* was used to describe enlargement of the scrotum and testes in male goats. The condition was thought to be most prevalent in the coastal areas of Sanaag. The British Veterinary Team (1972) used the term *godo welech* as a synonym for orchitis in goats. Brucellosis is the most likely cause of *godowaleh* (see also *dhulwas*).

gooryaan literally, roundworms or tapeworms: See *caal*.

guudaan: This term was used to describe a twisted neck in camels (see *shimber*). Peck (1939) used the word *gudan* as a synonym for arthritis in camels.

hargab: In Sanaag *hargab* was used to describe mild respiratory disease, equivalent to a human cold, in all species. The word *erghib* was given as the Somali name for pneumonia or influenza in camels by Dioli and Stimmelmayr (1992) though this term was not recorded in Sanaag.

hardhiig literally, bloody faeces: *Hardhiig* was used to describe dysentery in animals (see also *dabadhiig*).

humbul literally, huddle together: The word *humbul* was used to describe a tick-borne disease in sheep and goats which caused high mortality and morbidity. A tick fever complex called *hulumbe* or *shillin* was described by the British Veterinary Team (1972), and Edelston (1975) attributed most cases to Nairobi sheep disease.

indo hanun literally, painful eyes: *Indo hanun* was used to describe any eye problem, such as conjunctivitis, corneal lesions, or injury to the eyelids.

indo jebiye literally, closed eyes: This term had a similar usage to *indo hanun*.

injir literally, lice: Similar usage to *dibeeche*.

jabti: This term was used to describe gonorrhea in man, though it was also used to describe genital diseases in rams. The condition ulcerative balanoposthitis was described by the British Veterinary Team (1972) and has some similarities to *jabti* (see also *shadeedyo*).

jaqle literally, sudden death or sudden cry of an animal before death: *Jaqle* was used to describe any disease causing sudden death in small ruminants. Likely causes of sudden death include anthrax, pasteurellosis, clostridial disease and plant poisoning (see also *kud*).

jibaax: This was a respiratory disease which caused coughing, particularly in young horned species. The condition was associated with cold and wet weather. The meaning of the word *jibaax* was explained by describing a person passing through a large, tightly packed crowd. When the person pushes the first member of the crowd, this has the effect of moving other people in the crowd, so eventually the entire group is affected. The word *jibaax* described the spread of disease in a similar fashion through a group of animals.

kaadi dhiig literally, blood urine: Herders used this term to describe the clinical sign of haematuria or haemoglobinuria.

ka bixid: This term meant an insect or tick which bites an animal and remains attached to the body, for example, *Hippoboscid* flies (see *takar*).

kud literally, arrive suddenly: *Kud* was used to describe diseases which killed animals suddenly. Although anthrax is usually given as the English translation of *kud*, the term could be applied to any sudden death case. In camels differential diagnoses include haemorrahagic septicaemia (British Veterinary Team, 1972), clostridial disease and *Bacillus cereus* septicaemia (Wernery et al 1992). In sheep and goats pasteurellosis and clostridial disease are common causes of sudden death (see also *jaqle*).

laxawgal: This term was used to describe a mild respiratory disease in camels.

mal: Animals with septic arthritis (joint-ill) were said to be suffering from *mal*. Herders thought that the problem was caused by poor blood supply to the affected limb or limbs.

mandheer dhiig literally, bloody afterbirth: *Mandheer dhiig* was an alternative term to *dhicis*, and meant abortion.

mandheer noqosho literally, retained afterbirth: This term was used to describe the problem of retained placenta, particularly in camels.

mud dilaac literally, body crack: This term was used to describe abdominal herniation.

muglo literally, drunken/stagger: *Muglo* was used to describe a condition in camels which caused clinical signs similar to those of tick paralysis. Mares (1954) used the term as a synonym for tick paralysis in sheep and goats, and Hadrill (1993) also mentions *muglo* and describes the clinical signs of the disease.

oofmud literally, side puncture: The word *oof* described the area of the body wall of an animal just caudal to the axilla. The *sambab* (literally, lungs) were believed to lie beneath this area, which if punctured, *oofmud*, would give rise to respiratory problems. In Sanaag, the term was confined to disease in sheep. Abdurahman and Bornstein (1991) mention oof as a synonym for pneumonia in camels (see also *jibaax* and *dhugato*).

qaniinyo: This term was used to describe an insect which bites an animal but then does not remain attached to it.

qanjoole literally, lymph node disease: *Qanjoole* described enlargement of superficial lymph tissue, and was mentioned in association with *kud, dhuukaan* and other diseases.

qanayn literally, immature ticks.

qanjobarar literally, lymph node swelling: *Qanjobarbar* was used by some herders in a similar way to *qanjoole*. Abdurahman and Bornstein (1991) used the words *qanjobarbar* and *qerebarar* as synonyms for a condition in camels described as lymphadenitis, involving abscessation of the prepectoral or other superficial lymph nodes. In Sanaag, the word *waglal* (see below) was prefered when superficial lymph tissue became abscessated.

raaf dilaac literally, hoof crack: This term was used to describe injuries to the wall of the hoof.

ragat: This term described injuries to the sole of the foot, such as those caused by thorns.

ruqur literally, knot: The word *ruqur* was used to describe hydatid cysts in lungs or liver.

sambab literally, lungs: The word *sambab* was used to describe serious respiratory disease in sheep, goats and cattle. Contagious caprine pleuropneumonia and contagious bovine pleuropneumonia have been used as synonyms for *sambab* (British Veterinary Team, 1972; Hadrill 1992). Herders recognised that some lung disease resulted in *sambab faraq*. The term *faraq* implied that the lung was not able to move freely and was restricted by white bands of tissue. Therefore *sambab faraq* could describe the chronic adhesions associated with pleuropneumonia.

sangaale literally, enter the nose: The word *sangaale* was used to describe infestation of the nose and pharynx with nasal bots. The larvae of nasal botflys were called *sangal* (*Cephalopina tittilator* or *Oestrus ovis* in camels, *O.ovis* only in other species).

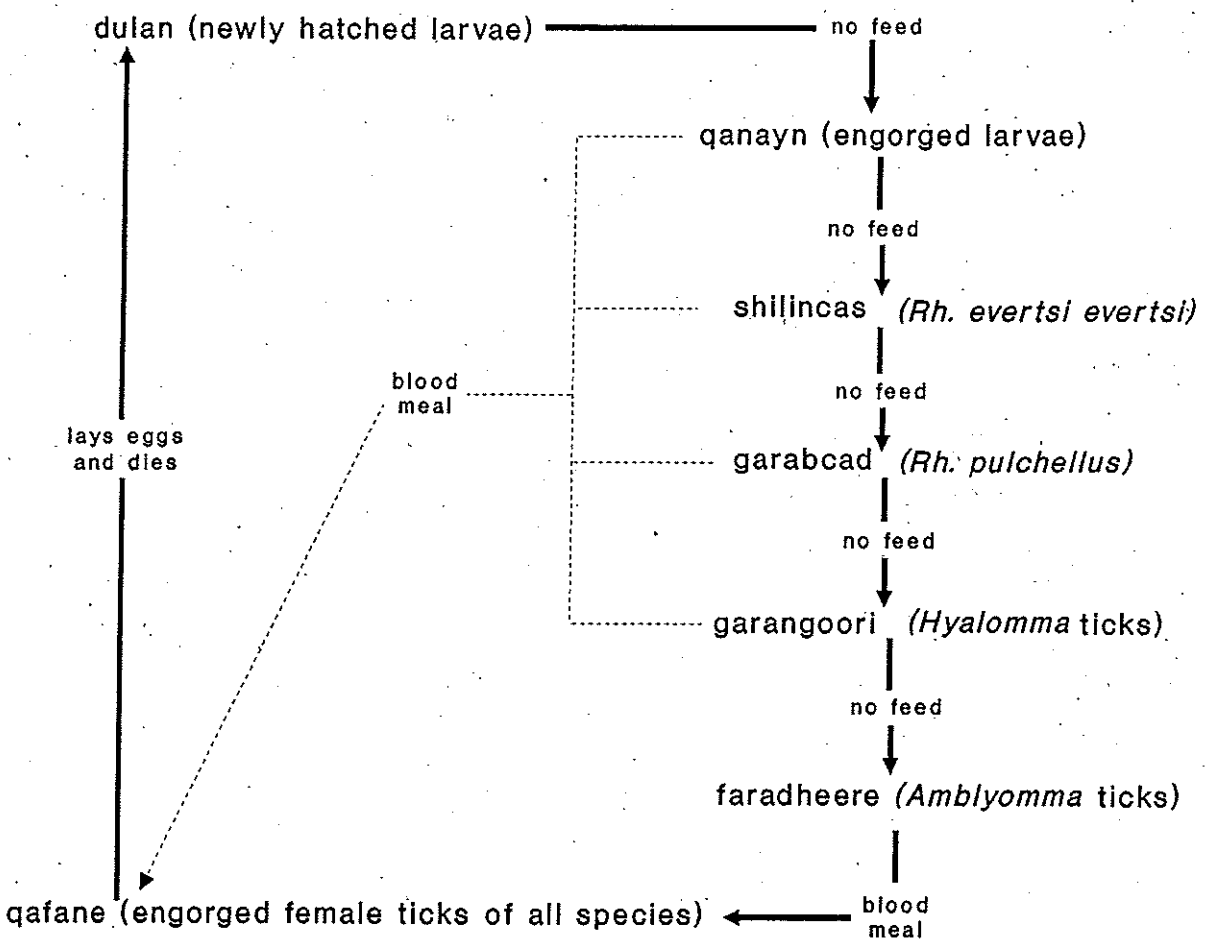
seed xooran literally, lost tendon: This term was used to describes a damaged limb tendon which contracted and caused lameness.

shadeedyo: This was the name given to a disease of rams which caused *kaadi caso* (literally, red urine), *kaadi qabad* (literally, difficult urination), and lesions on the penis, sheath, or skin around the genitals. Similar signs in ewes were called *kaadi caso* only. The word *jabti* was also used to desribe these features. Hadrill (1992) used *shadeedyo* as a synonym for balanoposthitis in sheep. Herders associated *shadeedyo* with ingestion of the plants *esal bukeye* (literally, sickness of ram penis) and *gadcade* (literally, white chin/beard). According to Mares (1954) the plant *Cleome brachycarpa* is called *esal bukeye* by Somali and it exudes an irritant oil which causes ulceration of the tip of the penis and sheath of rams. However, *Cleome brachycarpa* is described by Miller and Morris (1988) as possessing a "delicious, refreshing strong lemony perfume", which was rubbed over the body (human) as a perfume and deodorant. It is not clear whether the same plant also produces the irritant oil mentioned by Mares.

shaf-daloolo literally, hole in pedestal pad: *Shaf* is the Somali word for the pedestal pad of camels. *Daloolo* means "hole". Therefore *shaf daloolo* refers to injuries to the pedestal pad, particularly burst abcesses or sinuses.

shilin: In Sanaag this word was used to describe tick(s), tick infestation and tick borne disease. Herders recognised different tick species but considered these to be distinct stages in the life cycle of a single tick "*shilin*". A typical tick life cycle described by herders is illustrated in Figure 1.

Figure 1: Tick life cycle described by pastoralists in Sanaag.



The first stage of the life cycle was called ***dulan***, the newly hatched tick larvae when it was still on the ground. Once ***dulan*** attached itself to a host and began to feed it was known as *qanayn*. It was thought that if *qanayn* received an adequate blood meal, it would change directly into an adult female engorged tick called *qafane*. If *qanayn* was unble to feed sufficiently well, it would change to *shilincas* (*Rh.evertsi evertsi*). If *shilincas* fed well it too would change directly into *qafane*, but if it did not feed it would change into *garabcad* (*Rh. pulchellus*). This pattern of development was repeated, with *garabcad* changing into *garangoori* (*Hyalomma* species) and then *faradheere* (*Amblyomma* species) depending on the blood meal each stage in the life cycle received.

shilincas literally, red tick: These ticks were identified as *Rh.evertsi evertsi*.

shilin madow literally, black tick: These ticks were identified as belonging to the *Rh.simus* group.

shimber literally, bird In Sanaag the word *shimber* was used to describe madness or bizarre behaviour in an animal. The British Veterinary Team (1972) related *shimbir* to the neurological signs of the disease heartwater, although Dioli and Stimmelmayr (1992) use *shimber* as a synonym for wry-neck syndrome in camels. This condition was called *shimbir madax* by Abdurahman and Bornstein (1991), who also mention the term *shimbir calool* and translated it as "colic like symptoms".

shuban literally, diarrhoea: A non-specific term which was described diarrhoea in both livestock and man.

suuqiye: This term was used to describe camels which gradually lost body condition and became emaciated, despite continuing to graze and show no other signs of disease. In camels in Sanaag, trypanosomiais due to *T.evansi* was probably the main cause of *suuqiye*.

takar: This was the name given to *Hippoboscid* flies. Hippoboscidae are mentioned as possible vectors of *T.evansi* by Pegram and Higgins (1992), and Dioli and Stimmelmayr (1992).

waglal: This was the name given to infected skin wounds and abcesses which did not transmit to other animals. Frequently, these lesions were associated with abcessation of superficial lymph nodes, particularly the popliteal nodes.

xaglo literally, angle (as in mathematics): *Xaglo* described a congenital deformity of camel calves involving over extension of the carpal joints. The term was also mentioned by Mares (1954), and a number of congenital abnormalities in camels were described by Schwartz and Dioli (1992), including hyperflexion of the fetlocks, undershot knees and severe bilateral deviation of the carpal joints.

xaqiiqato: This term described lesions on the skin of the ventral thorax or pedestal pad which arose from friction between this area and the forelimbs. The problem was associated with enlargement of the pudendal pad, such as may occur in *shaf daloolo*, or in camels with a narrow chest conformation.

Discussion

The range of livestock illnesses, signs of ill health and behavioural changes described by pastoralists in Sanaag indicated a detailed knowledge of animal disease, including the infectious nature of some conditions and the role of arthropod vectors. For example, herders distinguished between the transmissible *dhaleeco* and the non-transmissible condition *waglal*, and recognised the role of ticks and flies in the spread of disease.

The understanding of the contagious nature of some diseases enabled pastoralists to develop rules which helped to limit spread of disease on the range, such as that which prevents a herder watering sick animals at a well where healthy stock are present. In addition, herders were also able to provide information on the epidemiology and pathology of some diseases which was of considerable diagnostic value to programme staff.

In terms of the design and planning of the VetAid/ACTIONAID animal health programme, the type of information presented in the notes assisted programme staff to work with pastoralists to prioritise livestock diseases, particularly when the data were incorporated into disease ranking exercises. Subsequently, the limited resources available to the programme were directed towards the most important diseases as agreed by both the pastoralists and programme staff. Of note in Sanaag, was that pastoralists were more interested in treating and controlling common problems such as footrot and parasite infestation, than for the programme to establish extensive vaccination schemes.

When comparing these notes with previous accounts of livestock disease in Somaliland and Somalia, a number of discrepancies and similarities came to light which could not be discussed in detail. The notes refer specifically to Sanaag and it was assumed that pastoralists in different regions of the country could use alternative terms for some diseases. Also, it was recognised that the notes are incomplete and much more information remains to be gathered. However, it is hoped that they will be of value to those involved in animal health work throughout Somaliland and Somalia, and will encourage them to formulate livestock dictionaries for local use.

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Notes

(1) Somaliland refers to the area of north west Somalia which declared independance in May, 1991 and which geographically, is identical to the former British Protectorate of Somaliland.

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Résumé

La participation active des pastoralistes faisait partie intégrale de la conception et de l'application du program vétérinaire VetAid/ACTIONAID dans la région de Sanaag en Somalie. Ce processus consistait, entre autres, dans la compilation d'un dictionnaire du vocabulaire que les pastoralistes employaient pour les maladies du bétail et leur traitement. Une partie de ce vocabulaire est présentée dans cette étude.

Resumen

Une parte vital del programa sanitario animal VetAid/ACTIONAID en la región Sanaag de Somaliland fue la participación activa de pastores locales en el diseño y la implementación del programa. Un elemento en este proceso fue la redacción de un diccionario pastoril sobre hierbas.

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