SOMALI DEMOCRATIC REPUBLIC

CENTRAL RANGELANDS SURVEY

VOLUME 1 PART 1

STATIC RANGE RESOURCES

APPENDICES

RESOURCE MANAGEMENT & RESEARCH
16B WEST CENTRAL STREET
LONDON W.C.1

S O M A L I D E M O C R A T I C R E P U B L I C

C E N T R A L R A N G E L A N D S U R V E Y

V O L U M E 1 P A R T 1

STATIC RANGE RESOURCES APPENDICES

The following Appendices are bound in this section of Volume 1 Part 1

VOL 1 PART 2

Appendix 1.01 Systematic site investigations: a complete list of sites. Refer To Figure 1.06 for map locations

Appendix 1.02 A complete list of plants collected by RMR botanist J.J.Beckett, with identifications to date.

Appendix 1.03 A complete list of plants collected by J.B.Gillett, C.F.Hemming & R.M.Watson, with identifications.

Appendix 1.04 Contracts 1 & 2 between the National Range Agency and Resource Management & Research.

Appendix 1.05 A proposal for a survey of resources in the Central Rangelands of Somalia.

Correspondence on map scales.

Appendix 1.06 Comments on availability of copies of maps and Landsat imagery.

Appendix 1.07 Correspondence and comments on the training programme.

APPENDIX 1.01

LIST OF PLANT NAME ABBREVIATIONS USED IN SAMPLING SITE DESCRIPTIONS

A. anthelmintica	Abizzia anthelmintica
A. edgeworthii	Acacia edgeworthii
A. globosa	Adenia globosa
A. hispidissima	Arnebia hispidissima
A. horrida	Acacia horrida ssp. benadirensis
A. kelleri	Aristida kelleri
A. lanata	Aerva lanata
A. leucospira	Acacia leucospira
A. mellifera	Acacia mellifera ssp. mellifera
A. nilotica	Acacia nilotica
A. nubica	Acacia nubica
A. paradoxa	Acacia paradoxa
A. reficiens	Acacia reficiens ssp. misera
A. trisulcus	Anisotes trisulcus
A. senegal	Acacia senegal
A. seyal	Acacia seyal
A. sieberana	Aristida sieberana
A. somalensis	Arthrocarpum somalensis
A. stuhlmannii	Acacia stuhlmannii
A. tortilis	Acacia tortilis ssp. spirocarpa
An. kelleri	Andropogon kelleri
B. edulis	Blepharis edulis
B. fructicosum	Blepharispermum fructicosum
B. hildebrandtii	Boswellia hildebrandtii
B. orbicularis	Balanites orbicularis
B. minimifolia	Boscia minimifolia
B. scillin	Balanites scillin
C. albidus	Caucanthus albidus
C. ancistrophora	Commiphora ancistrophora
C. aucheri	Chrysopogon aucheri var. quinqueplumis
C. ciliaris	Cenchrus ciliaris
C. cinerascens	Corchorus cinerascens
C. cordofanus	Cephalocroton cordofanus
C. echinatus	Cenchrus echinatus
C. edulis	Cordeauxia edulis
C. erianthera	Caesalpinia erianthera
C. erhlangerana	Commiphora erhlangerana
C. flabellulifera	Commiphora flabellulifera
C. flaviflora	Commiphora flaviflora
C. glandulosa	Cadaba glandulosa
C. heterotricha	Cadaba heterotricha

APPENDIX 1.01 Contd.

C. microphyllum	Clereodendron microphyllum
C. playfarii	Commiphora playfarii
C. quadrangularis	Cissus quadrangularis
C. reniformis	Commicarpus reniformis
C. somalensis	Cordyla somalensis
C. trothae	Caesalpinia trothae
D. commiphoroides	Dalbergia commiphoroides
D. elata	Delonix elata
D. glabra	Dobera glabra
D. glomerata	Dicrostachys glomerata ssp. benadirensis
D. scindicum	Dactyloctenium scindicum
E. bifida	Euphorbia bifida
E. cenchroides	Enneapogon cenchroides
E. cuneata	Euphorbia cuneata
E. danis	Espesia danis
E. inaequispina	Euphorbia inaequispina
E. longispina	Euphorbia longispina
E. melanacantha	Erythrina melanacantha var. somala
E. robecchii	Euphorbia robecchii
E. spectabilis	Erythrochlamys spectabilis
F. vasta	Ficus vasta
G. cerasifera	Grewia cerasifera
G. fiorii	Gardenia fiorii
G. hababensis	Gyrocarpus hababensis
G. penicilliata	Grewia penicilliata
G. tenax	Grewia tenax
G. villosa	Grewia villosa
H. contortus	Heteropogon contortus
H. aquifolium	Hartogia aquifolium
I. donaldsonii	Ipomoea donaldsonii
I. citrina	Ipomoea citrina
I. ogadensis	Indigofera ogadensis
I. rotundifolia	Iphiona rotundifloia
I. ruspolii	Indigofera ruspolii
I. sparteola	Indigofera sparteola
I. spinosa	Indigofera spinosa
J. dichtar	Jatropha dichtar
J. obiadensis	Jatropha obiadensis
J. tropaeolifolia	Jatropha tropaeolifolia
J. villosa	Jatropha villosa var. glabra

K. splendens	Kelleronia splendens
L. curviflorus	Loranthus curviflorus
L. distichum	Limonium distichum
L. glutinosa	Loewia glutinosa
L. greenwayii	Lannea greenwayii
L. senegalensis	Leptothrium senegalensis
M. angolensis	Maerua angolensis
P. pinifolium	Panicum pinifolium
P. revoilii	Pleuropterantha revoilii
S. busseanus	Sesamothamnus busseanus
S. incana	Senra incana
S. ioclados	Sporobolus ioclados
S. hirtigluma	Stipagrostis hirtigluma
S. mirabilis	Strophanthus mirabilis
S. persica	Salvadora persica
S. pycnophylla	Salsola pycnophylla
S. rivae	Sterculia rivae
S. ruspolianus	Sporobolus ruspolianus
S. spicatus	Sporobolus spicatus
S. viminale	Sarcostemma viminale
T. aphylla	Tamarix aphylla
T. flavescens	Triumfetta flavescens
T. obbiadensis	Tephrosia obbiadensis
T. orbicularis	Terminalia orbicularis
T. spathaceus	Tetrapogon spathaceus
U. setulosa	Urochondra setulosa
X. hispida	Xylocalex hispida
Z. album	Zygophyllum album
Z. simplex	Zygophyllum simplex
Z. hamur	Zizyphus hamur

aff. Closely related to the indicated species.

R.S.P. Representative site photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 1/1

Date: 10/1/79 Observer: Beckett Altitude 540 m

Site Location - Lat. 7°41' Long. 47°51' Map Sheet No. 1

GENERAL DESCRIPTION Flat, gently sloping away from rocky hillside. Surface strewn with rocks up to 9" in diameter. Medium thick mixed bush with poor grass cover.

SOIL - General Shallow fine silty sand with many small to large limestone fragments.

Auger Rock at 20 cm Colour 5 YR 5/6 yellowish red

pH 7.4 Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 34%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		B. minimifolia	All species abundant	
		A. senegal		
		A. horrida		
		Commiphora 2 spp.		
		D. commiphoroides		
		E. cuneata		
		Solanum sp.		
		Grewia sp.		
		C. edulis		
		A. lanata		
		I. ruspolii		
		Barleria sp.		
		A. kelleri		
		Aristida sp.		
		E. cenchroides		
		S. hirtigluma		
		C. ciliaris		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS Serial Number Reference Number Contents

J 3/15 - 17 1/1/12 - 14 RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 1/5

Date: 11/1/79 Observer: Beckett Altitude 620 m

Site Location - Lat. 7°47' Long. 48°00' Map Sheet No. 2

GENERAL DESCRIPTION Rocky slope leading up to small hill. Surface very rock strewn and covered with medium thick bush. Medium grass cover.

SOIL - General Very shallow fine silty sand.

Auger - Colour 5 YR 5/6 yellowish red

pH 7.5 Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 52%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		D. commiphoroides	All species abundant	
		Commiphora sp.		
		E. cuneata		
		Boswellia sp.		
		C. edulis		
		A. nubica		
		C. glandulosa		
		Sterculia sp.		
		L. senegalensis		
		E. cenchroides		
		C. ciliaris		
83	small annual	grass		
		Aristida sp.		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 3/23 - 26	1/5/9 - 12	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 1/6

Date: 11/1/79 Observer: Beckett Altitude 630 m

Site Location - Lat. 7°47' Long. 48°04' Map Sheet No. 2

GENERAL DESCRIPTION Undulating massive limestone hills with medium thick mixed bush. Poor grass cover surface rock strewn.

SOIL - General Very shallow fine sand over limestone.

Auger - Colour -

pH Other comments -

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Oryx
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	46%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		B.orbicularis		
		B. minimifolia		
		A. horrida		
		C. edulis		
		A. reficiens		
		E. cuneata		
		Commiphora sp.		
		D. glabra		
		C. glandulosa		
		Grewia sp.		
		Sarcostemma sp.		
		L. senegalensis		
		A. kelleri		
		E. cenchroides		
		C. aucheri		
		Chloris sp.		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 3/34 - 35	1/6/11 - 13	RSP
	J 4/ 1		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 1/7

Date: 11/1/79 Observer: Beckett Altitude 650 m.

Site Location - Lat. 7°47' Long. 48°07' Map Sheet No. 2

GENERAL DESCRIPTIONS Rocky limestone hill top, medium thick mixed bush, medium to poor grass cover. Surface rock strewn

SOIL - General Shallow medium to fine particled sand with some silt.

Auger - Colour 7.5 YR 6/6 reddish yellow

pH 7.5 Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 47%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. reficiens		
		Commiphora 2 spp.		
		D. glabra		
		B. minimifolia		
		Solanum sp.		
		C. edulis		
		Grewia sp.		
		Acacia sp.		
		E. cuneata		
		Aloe sp.		
		A. lanata		
84		Chloris sp.		
		A. kelleri		
		L. senegalensis		
		E. cenchroides		
		T. spathaceus		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 3/27 -30	1/7/10 - 12	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 2/3

Date: 10/1/79 Observer: Beckett Altitude 590 m

Site Location - Lat. 7°47' Long. 47°58' Map Sheet No. 1

GENERAL DESCRIPTION Flat clay plain with arced vegetation formations. Medium thick mixed bush in arcs with good herb and grass cover, alternating with grassless open areas. Andropogon being the principal grass.

SOIL - General Deep sand and clay loam with many small rock fragments, becoming more numerous and large with depth.

Auger Colour 5 YR 5/6 yellowish red

pH Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Not estimated

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. horrida	all woody vegetation abundant	
	"Haggar"	Commiphora sp.		
		D. commiphoroides		
		C. glandulosa		
		A, mellifera		
		A. tortilis		
		Triumfetta. sp.		
		Barleria sp.		
		D. edulis		
		An. kelleri	The predominant grass	
		Aristida sp.		
		Sporobolus sp.		
		L. senegalensis		
		D. scindicum		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 3/18 - 22	2/12/11 - 15	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 2/5

Date: 11/1/79 Observer: Beckett Altitude 610 m

Site Location - Lat. 7°48' Long. 48°04' Map Sheet No. 2

GENERAL DESCRIPTION Flat alluvial plain between limestone escarpments. Arced vegetation formations of thick mixed bush alternating with open grassless areas. Andropogon being the principal grass

Soil - General Deep sandy and silt with many small limestone particles, becoming slightly darker below and more stoney.

Auger - Colour 5 YR 5/6 yellowish red

pH 7.5 Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Not estimated

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. reficiens	All species abundant	
		A.senegal		
		C. glandulosa		
		D. commiphoroides		
		B. minimifolia		
		Commiphora sp.		
		Acacia sp.		
		Barleria sp.		
		An. kelleri		
		Enteropogon sp.		
		L. senegalensis		
		Sporobolus sp.		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 4/2 - 4	2/5/10 - 12	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 2/10

Date: 28/1/79 Observer: Beckett Altitude 440 m

Site Location - Lat. $7^{o}26'$ Long. $47^{o}50'$ Map Sheet No. 6

GENERAL DESCRIPTION Very flat, sandy clay plain with arced vegetation. Areas of mixed medium thick scrub alternating with open areas of poor grass and herb cover.

SOIL - General Fine sand and clay with many limestone rocks (10 cm) below surface. Also scattered surface rocks in open areas.

Auger Colour 5 YR 5/8 yellowish red

pH 7.4 Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Not estimated

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. reficiens	All species abundant	
		B. minimifolia		
		G. tenax		
		Commiphora 2 spp.		
		D. commiphoroides		
		A. mellifera		
		A. nubica		
		C. glandulosa		
		Blepharis sp.		
		I. ruspolii		
		Triumfetta sp.		
		A. lanata		
		Aristida sp.		
		A. kelleri		
		S. ruspolianus		
		Sporobolus sp.		
		C. aucheri		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 5/5 - 6	2/10/5 - 6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 2/16

Date: 12/1/79 Observer: Beckett Altitude 500 m

Site Location - Lat. 7°34' Long. 47°52' Map Sheet No. 6

GENERAL DESCRIPTION Flat, alluvial plain with arced vegetation formations. Good grass cover and evidence of heavy grazing.

SOIL - General Deep fine clay and sand with small limestone fragment

Auger - Colour -

pH - Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Not estimated

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. horrida		
		A. tortilis		
		B. minimifolia		
		G. tenax		
		Commiphora sp.		
		D. commiphoroides		
		Acacia sp.		
		Indigofera sp.		
		Unidentified grass		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 4/7 - 8	2/16/1 - 2	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 2/17

Date: 12/1/79 Observer: Beckett Altitude 480 m

Site Location - Lat. 7°34' Long. 48°00' Map Sheet No. 7

GENERAL DESCRIPTION Flat, open alluvial plain with low shrubs and herbs, rather poor and patchy grass cover.

SOIL - General Deep fine sand and clay with many small limestone fragments. Becoming slightly browner below. Very dusty when dry.

Auger - Colour -

pH Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 20%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		C. flaviflora		
		I. rotundifolia		
		E. cuneata		
		C. glandulosa		
		Triumfetta sp.		
		Disperma sp.		
		A. lanata		
		B. edulis		
		L. senegalensis		
		D. scindicum		
		A. kelleri		
		Aristida sp.		
		T. spathaceus		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 4/9 - 12	2/17/1 - 4	RSP
	D 14, 15 16		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 3/11

Date: 3/1/79 Observer: Beckett Altitude 390 m

Site Location - Lat. 7°17' Long. 47°34' Map Sheet No. 11

GENERAL DESCRIPTION Undulating sand with rocky limestone ridges. Thin mixed bush with poor grass cover and extensive exposed areas.

SOIL - General Fine silty sand over limestone.

Auger Rock at 70 cm Colour -

pH - Other comments -

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	29%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		B. minimifolia		
		E. cuneata		
		Commiphora 2 spp.	All species abundant	
		Boswellia sp.		
		A. horrida		
		A. tortilis		
		A. edgeworthii		
		Grewia sp.		
		I. rotundifolia		
		I. ruspolii		
		C. cinerascens		
		S. hirtigluma		
		A. kelleri		
		Aristida sp.		
		L. senegalensis		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 2/24	3/11/4	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 3/12

Date: 3/1/79 Observer: Beckett Altitude 400 m

Site Location - Lat. 7°18' Long. 47°34' Map Sheet No. 11

GENERAL DESCRIPTION Undulating sand with limestone ridges and many loose stones. Open Acacia bush with poor grass cover.

SOIL - General Medium to fine particled silty sand over limestone.

Auger - Colour -

pH - Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 28%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		E. cuneata		
		A. tortilis		
		A. horrida		
		Solanum sp.	All species abundant	
		Boswellia sp.		
		C. flaviflora		
		Maerua sp.		
		I. rotundifolia		
		L. senegalensis		
		C. ciliaris		

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 2/25 - 26	3/12/5 - 6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 3/13

Date: 28/1/79 Observer: Beckett Altitude 440 m

Site Location - Lat. 7°24' Long. 47°16' Map Sheet No. 6

GENERAL DESCRIPTION Top of very rocky limestone escarpment. Medium thick mixed bush, poor herb and grass cover.

SOIL - General Very shallow fine sand.

Auger Rock at 0 -5 cm Colour -

pH Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

CRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 38%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. reficiens		
		A. horrida	All species abundant	
		A. edgeworthii		
		C. glandulosa		
		I. donaldsonii		
		Caucanthus sp.		
		Balanites sp.		
		E. longispina		
		B. orbicularis		
		Commiphora sp.		
		Grewia sp.		
		B. fructicosum		
		Blepharis sp.		
		Barleria sp.		
		Aristida sp.		
		E. cenchroides		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 5/7 - 8	3/13/5 - 6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 5/3

Date: 12/1/79 Observer: Beckett Altitude 420 m.

Site Location - Lat. $7^{o}23'$ Long. $47^{o}40'$ Map Sheet No. 6

GENERAL DESCRIPTION Flat, very stoney with many limestone outcrops. Medium thick Acacia/Commiphora bush, very poor grass cover.

SOIL - General Very shallow fine sand.

Auger - Colour -

pH Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 45%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. reficiens	All species abundant	
		A. horrida		
		Acacia sp.		
		C. edulis		
		D. commiphoroides		
		A. nubica		
		B. minimifolia		
		B. fructicosum		
		Solanum sp.		
		Cadaba sp.		
		Commiphora sp.		
		Boswellia sp.		
		I. ruspolii		
		B. edulis		
		E. cenchroides		
		Aristida sp.		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 4/24-25	5/3/5 - 6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 5/5

Date: 12/1/79 Observer: Beckett Altitude 470 m

Site Location - Lat. $7^{o}28'$ Long. $47^{o}43'$ Map Sheet No. 6

GENERAL DESCRIPTION Flat, very rocky limestone area, small stones to boulders. Medium thick mixed bush, very poor grass cover.

SOIL - General Very shallow fine sand over limestone.

Auger Colour -

pH Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 36%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. senegal		
		A. horrida	All species abundant	
		Acacia sp.		
		B. minimifolia		
		G. tenax		
		E. cuneata		
		C. edulis		
		Commiphora 2 spp.		
		B. fructicosum		
		I. ruspolii		
		B. edulis		
		C. aucheri		
		A. kelleri		
		E. cenchroides		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 4/23	5/5/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 5/7

Date: 3/1/79 Observer: Beckett Altitude 310 m

Site Location - Lat. 7°20' Long. 47°35' Map Sheet No. 12

GENERAL DESCRIPTION Undulating open Acacia bush. Stoney limestone mantle with very poor grass cover. Extensive bare patches.

SOIL - General Very shallow fine and dusty, silty sand, over limestone.

Auger - Colour -

pH - Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 6%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. reficiens		
		A. horrida		
		Commiphora sp.		
		E. cuneata		
		B. minimifolia		
		C. glandulosa		
		A. lanata		
		L. senegalensis		
		Aristida sp.		
88		S. hirtigluma		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 2/28	5/7/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 6/2

Date: 2/1/79 Observer: Beckett Altitude 290 m

Site Location - Lat. 7°05' Long. 47°57' Map Sheet No. 12

GENERAL DESCRIPTION Flat, sandy with many scattered limestone stones on surface. Open scrub with medium grass cover.

SOIL - General Fine to medium particled sandy with some silt and calcareous nodules, and many rocks.

Auger - Colour 5YR 5/6 yellowish red.

pH 7.3 Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 40%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		E. cuneata		
		Commiphora 2 spp.		
		A. horrida		
		B. orbicularis		
		A. senegal		
	very low bush "Adad"	A. paradoxa		
		A. lanata		
		I. rotundifolia		
		A. kelleri		
		Aristida sp.		
		D. scindicum		
76	unidentified grass			

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 2/19 -20	6/2/6 - 7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 6/3

Date: 2/1/79 Observer: Beckett Altitude 290 m

Site Location - Lat. 7°05' Long. 47°58' Map Sheet No. 12

GENERAL DESCRIPTION Small dry gulley in a rather stoney limestone area. Mixed medium thick Acacia/Commiphora bush with extensive bare patches and poor grass cover.

SOIL - General Fine sand with a little silt and calcareous nodules over limestone.

Auger Rock at 75 cm Colour -

pH - Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 42%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		Commiphora 2 spp.	All species abundant	
		E. cuneata		
		B. minimifolia		
		Boswellia sp.		
		B. orbicularis		
		Cassia sp.		
		D. glabra		
		C. glandulosa		
		A. horrida		
		A. tortilis		
		A. lanata		
		Ipomea sp.		
		C. ciliaris		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS Nil

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 6/7

Date: 30/1/79 Observer: Beckett Altitude 280 m

Site Location - Lat. 7°08' Long. 48°08' Map Sheet No. 13

GENERAL DESCRIPTION Flat to slightly undulating. Open mixed scrub with scattered Boscia trees

SOIL - General Medium particled sand, rather loose surface becoming more consolidated and redder below.

Auger Rock at 20 cm Colour -

pH Other comments -

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	28%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		B. minimifolia		
		B. orbicularis		
		E. cuneata		
		C. flaviflora		
		D. glabra		
		Acacia sp.		
	non-spiney	J. villosa		
		A. lanata		
		Indigofera sp.		
		Cassia sp.		
		Cleome sp.		
		Sedge		
		C. ciliaris		
		A. sieberana		
		Aristida sp.		
		E. cenchroides		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 5/16	6/7/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 7/1

Date: 3/2/79 Observer: Beckett Altitude 210 m

Site Location - Lat. 7°14' Long. 48°47' Map Sheet No. 14

GENERAL DESCRIPTION Flat, open and sandy. Scattered Acacia tortilis trees otherwise low shrubs. Poor grass cover with much exposed sand.

SOIL - General Fine sand with coarse quartz mantle. Surface rather loose becoming more consolidated below.

Auger Rock at 40 cm Colour -

pH - Other comments -

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	22%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		J. dichtar		
		A. tortilis		
		I. ruspolii		
		J. villosa		
		Indigofera sp.		
144	"Cahn Sole"	Cassia sp.		
		Z. hamur		
		A. leucospira		
		A. edgeworthii		
		A. sieberana		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 6/15 - 17	J 7/1/3-5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 7/2

Date: 3/2/79 Observer: Beckett Altitude 210 m

Site Location - Lat. 7°12' Long. 48°44' Map Sheet No. 14

GENERAL DESCRIPTION Flat, open, sandy with scattered limestone outcrops. Treeless, chiefly low shrubs. Indigofera ruspolii the dominant shrub. Poor grass cover and much exposed sand.

SOIL - General Coarse to fine particled quartz sand, with limestone fragments. No horizons.

Auger Rock at 50 cm. Colour -

pH Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Dibatag

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 33%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		I. ruspolii		
69		A. edgeworthii		
		J. dichtar		
	low scrambling	Commiphora sp.		
		P. revoilii		
		Indigofera sp.		
		L. senegalensis		
		T. spathaceus		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 6/10 - 14	7/2/3-7	RSP and Acacia sp.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 7/3

Date: 3/2/79 Observer: Beckett Altitude 210 m

Site Location - Lat. $7^{o}10'$ Long. $48^{o}44'$ Map Sheet No. 14

GENERAL DESCRIPTION Flat to gently undulating, sandy, and treeless. Chiefly low shrubs with poor grass cover and much exposed sand.

SOIL - General Medium particled quartz sand. Surface rather loose becoming more consolidated below. Scattered limestone outcrops.

Auger Rock at 50 cm Colour -

- pH Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 37%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
	Low scrambling	Commiphora sp.		
		J. dichtar		
	"Cahn sole"	Cassia sp.		
		Indigofera sp.		
		Triufetta sp.		
		L. glutinosa		
	"Ged guran"			gives animals a sore throat
		A. sieberana		
		L. senegalensis		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS Nil

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 7/7

Date: 4/2/79 Observer: Beckett Altitude 200 m

Site Location - Lat. $7^{o}16'$ Long. $49^{o}01'$ Map Sheet No. 15

GENERAL DESCRPTION Very open and exposed, gently undulating and sandy. Almost treeless except for scattered Balanites sp. Mainly low shrubs, very poor grass cover. Much exposed sand.

SOIL - General Fine coarse sand, slight mantering of coarse quartz particles on surface. Surface 5 cm rather loose. Scattered limestone rocks on surface.

Auger Rock at 18 cm Colour 5 YR 5/8 yellowish red

pH 7.4 Other comments No moisture roots to 15 cm

SURFACE WATER AND WELLS Nil

TERMITARIA Scattered low type

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels near site

CROPPING Nil

OTHERS Nil

VEGETATION - Ground Cover 17%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		Balanites sp.	All species abundant	
		E. cuneata		
		Indigofera sp.		
	"Dilindilko" low	Commiphora sp.		
		A. edgeworthii		
		L. gluntinosa		
		J. villosa		
60	"Hageen"	I. sparteola		
61	"Leb"	Fagonia sp.		Causes animals to cough
62				
		C. aucheri		
		Aristida sp.		
		L. senegalensis		
		C. stoloniferum		
		Enteropogon sp.		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 6/24 - 26	7/7/3-5	Stand of Boscia trees at site

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 7/8

Date 4/2/79 Observer: Beckett Altitude 200 m

Site Location - Lat. $7^{o}17'$ Long. $49^{o}04'$ Map Sheet No. 15

GENERAL DESCRIPTION Flat, open, sandy. Almost treeless except for Acacia sp. Chiefly low bushes and shrubs, very poor grass cover. Much exposed sand, a few surface rocks.

SOIL - General Fine to coarse particled sand. Surface loosely consolidated.

Auger Rock at 90 cm Colour 5 YR 5/8 yellowish red

pH 7.4 Other comments No moisture roots to 40 cm

SURFACE WATER AND WELLS Nil

TERMITARIA Present

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 32%

- Components

Collection Number	Local Names	Identification	Abundance	Use and other Information
40	tall thin	Acacia sp.		
		Commiphora sp.	All species abundant	
		J. dichtar		
		J. villosa		
		A. edgeworthii		
		I. ruspolii		
	small tussocky	Euphorbia sp.		
		L. glutinosa		
		Indigofera sp.		
72		Cassia sp.		
144	"Cahn Sole"	Cassia sp.		
65	"Bur Bur"	Rubiaceous herb		
67		Enteropogon sp.		
		A. sieberana		
		C. aucheri		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 6/29 -30	7/8/3-4	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 7/9

Date: 4/2/79 Observer: Beckett Altitude 190 m

Site Location - Lat. 7°14' Long. 48°57' Map Sheet No. 14

GENERAL DESCRIPTION Flat, open and sandy. Treeless, chiefly low shrubs and bushes, grass cover very poor. Much exposed sand, some rocks and small stones on surface.

SOIL - General Fine to coarse sand particled on limestone. Surface 10 cm loosely consolidated becoming more compact below. Coarse quartz mantle.

Auger Rock at 0 - 20 cm. Colour 5 YR 5/8 yellowish red

pH - Other comments No moisture, poor root development.

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Sand easily wind blown. Vegetation in tussocks.

VEGETATION - Ground cover 32%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
144	"Cahn Sole"	Cassia sp.		
	small tussocky	Euphorbia sp.		
		A. edgeworthii		
		Commiphora sp.		
		E. cuneata		
		L. glutinosa		
	"Bur Bur"	Rubiaceous herb		
	"Leb"	Fagonia sp.		Makes animals "cough"
		Indigofera sp.		
		Aristida sp.		
		C. aucheri		
		Enteropogon sp.		

- Growth stages All vegetation pre flowering except Loewia

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 6/32-33	7/9/3-4	Note pillar effect of sand around shrubs.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 7/15

Date: 17/3/79 Observer: Beckett Altitude 120 m

Site Location: Lat. 6°49" Long. 48°42' Map Sheet No. 20

GENERAL DESCRIPTION Flat, open almost treeless except for scattered Balanites sp. Low shrubs and bushes, herb and grass cover poor. Occasional limestone outcrops.

SOIL - General Fine quartz sand over pinkish limestone.

Auger Rock at 40 cm Colour 5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Very occasional low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 51%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. orbicularis		
		A. edgeworthii	All species abundant	
72	"Chaor"	Cassia sp.		
		C. cinerascens		
		Liliaceous herbs		
	"Bur bur"	Rubiaceous herb		
144	"Cahn Sole"	Cassia sp.		
		2 Commiphora spp.		
		L. gluntinosa		
		Indigofera sp.		
		Enteropogon sp.		
		L. senegalensis		
	Unidentified	sedge		

- Growth stages Vegetation pre flowering

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 8/7

Date: 27/6/79 Observer: Beckett Altitude 150 m

Site location - Lat. $5^{o}12'$ Long. $47^{o}56'$ Map Sheet No. 53

GENERAL DESCRIPTION Undulating sandy banks and small hills.. Medium thick bush, A. reficiens dominant. Grass and herb cover very poor.

SOIL - General Deep very fine sand.

Auger -

pH -

Colour 7.5 YR 6/6 reddish yellow

Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Stabilised dunes

GRAZING ANIMALS Camels

CROPPING Nil

OTHERS Nil

VEGETATION - Ground Cover

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. reficiens	+	
	"Adorh"	S. jubae		
		A. nilotica		
		D. glomerata		
		A. horrida		
		I. ruspoli		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS

Serial Number	Reference Number	Contents
J/16 14	8/7/5	RSP
15	8/7/6	RSP
16	8/7/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 8/8

Date: 27/6/79 Observer: Beckett Altitude 211 m

Site Location - Lat. 5°07' Long. 47°56' Map Sheet No. 53

GENERAL DESCRIPTION Flat, sandy, medium thick bush. Poor herb/grass cover.

SOIL - General Deep very fine sand

Auger - Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION No obvious erosion but rippling on surface indicates some wind erosion.

DUNES Nil

GRAZING ANIMALS Camels

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. reficiens	*	
		D. glomerata	*	
	"Adorh"	S. jubae		
		A. horrida		
	small yellow flowered	Crotolaria sp.		
		Salsola bottae		
		L. senegalensis		
		A. kelleri		
		Aristida sp.		
		C. ciliaris		
		T. spathaceus		

- Growth stages Woody vegetation flowering and fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 16 17	8/8/5	RSP
	18	8/8/6	RSP
	19	8/8/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 9/1

Date: 21/4/79 Observer: Beckett Altitude 197m

Site Location - Lat. 5°32' Long. 47°06' Map Sheet No.44

GENERAL DESCRIPTION Flat to gently undulating sandy with occasional limestone ridges, medium herb cover, poor grass cover

SOIL - General Deep fine to medium particled quartz sand. Becoming redder with depth.

Auger - Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworhtii		
		I. ruspolii		
		E. cuneata		
		C. erianthera		
	"Adad" very low bush	A. paradoxa		
		I. donaldsonii		
		Triumphetta sp.		
		Iphiona rotundifolia		
		C. ancistrophora		
		L. glutinosa		
		Pleuropterantha revoilii		
		2 Commiphora spp.		
		Aristida sp.		

- Growth stages

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTION SITE NO. 9/2

Date: 21/4/79 Observer: Beckett Altitude 200 m.

Site Location - Lat. 5°32' Long. 47°10' Map Sheet No. 44

GENERAL DESCRIPTION Flat, sandy, occasional limestone ridges. Medium herb and grass cover.

SOIL - General Fine quartz sand.

Auger Rock at 30 cm. Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels

CROPPING Nil

OTHERS Nil

VEGETATION - Gound cover 58%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii		
	"Adad" very low bush	A. ~~parodoxa~~		
		I. donaldsonii		
		Sterculia rivae		
153	"Jerogho"	A. aff. edgeworthii		
		Commiphora sp.		
152		Crotolaria sp.		
151		Indigofera sp.		
		Iphonia rotundifolia		
		Pleuropterantha revoilii		
		Tiliaceous herb		
		L. senegalensis		
		C. ciliaris		
		E. cenchroides		

- Growth stages -

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 12/30	9/2/5	RSP
	31	9/2/6	RSP
	32	9/2/7	Acacia aff. edgeworthii
	33	9/2/8	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 9/3

Date: 21/4/79 Observer: Beckett Altitude 170 m.

Site Location - Lat. $5^{o}32'$ Long. $47^{o}22'$ Map Sheet No. 44

GENERAL DESCRIPTION Flat to slightly undulating. Occasional limestone ridges. Generally low shrubs and herbs. Medium grass and herb cover.

SOIL - General Medium particled sand.

Auger Rock from 5 cm to 100 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 54%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
	"Adad" very low bush	A. paradoxa		
		A. edgeworthii		
		L. glutinosa	All species abundant	
		I. ogadensis		
154	"Sara adi"	T. obbiadensis		
		I. ruspolii		
		C. flaviflora		
		Commiphora sp.		
		S. busseanus		
		J. dichtar		
		Tiliaceous herbs		
		Pleuropterantha revoilii		
		A. sieberana		
		Enteropogon sp.		
		L. senegealensis		

- Growth Stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 10/5

Date: 8/1/79 Observer: Beckett Altitude 325 m

Site Location - Lat. $7^{o}01'$ Long. $47^{o}26'$ Map Sheet No. 11

GENERAL DESCRIPTION Flat to gently undulating, sandy with limestone ridges and much scattered surface rock. Indigofera scrub with very poor grass cover, probably overgrazed.

SOIL - General Medium to fine particled sand with a little silt over limestone.

Auger Rock at 57 cm Colour -

pH - Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 42%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		C. flaviflora		
		B. minimifolia		
		E. cuneata		
		E. longispina		
		A. tortilis		
		A. edgeworthii		
		Jatropha sp.		
		I. rotundifolia		
		I. ruspolii		
		Aristida sp.		
		L. senegalensis		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS Nil

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 10/6

Date: 7/1/79 Observer: Beckett Altitude 360 m

Site Location - Lat. 7°01' Long. 47°25' Map Sheet No. 11

GENERAL DESCRIPTION Flat to gently undulating, very stoney limestone surface. Thin Acacia bush with very poor grass cover.

SOIL - General Very shallow fine sand with a little silt.

Auger Rock at 25 cm Colour -

pH Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Présent

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 28%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. anthelmintica	All species abundant	
		E. cuneata		
		A. senegal		
		A. horrida		
		A. reficiens		
		I. rotundifolia		
		I. donaldsonii		
		Commiphora 2 spp.		
		B. minimifolia		
		E. cenchroides		
		A. kelleri		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 3/3 - 4	10/6/5 - 6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 10/9

Date: 20/12/78 Observer: Beckett Altitude 350 m

Site Location - Lat. 7°05' Long. 47°40' Map Sheet No. 12

GENERAL DESCRIPTION Flat, sandy, chiefly low scrub and bushes, poor grass cover, with much exposed sand. Occasional outcrops of limestone.

SOIL - General Fine sand with a little silt and limestone stones and fragments.

Auger Rock at 80 cm Colour 5 YR 6/6 light brown

pH 7.4 Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 36%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. horrida		
		A. edgeworthii	All species abundant	
		B. minimifolia		
		S. busseanus		
		A. senegal		
		G. tenax		
		Commiphora sp.		
		E. cuneata		
		I.rotundifolia		
		P. revoilii		
		Cassia sp.		
		Indigofera sp.		
		S. hirtigluma		
		C. aucheri		
		Aristida sp.		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 2/1 -3	10/9/5 - 9	RSP
	VI/20, 21		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 10/12

Date: 7/4/79 Observer: Beckett Altitude 290 m

Site Location Lat. 6°20' Long. 46°57' Map Sheet No. 22

GENERAL DESCRIPTION Flat, shallow sand with limestone outcrops and stone strewn surface. Medium to thin Acacia/Commiphora bush. Very poor grass cover.

SOIL - General Shallow fine sand over limestone.

Auger Rock at 0 - 10 cm Colour 5 YR 5/8 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 31%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		M. angolensis		
		S. persica	All species abundant	
		A. aff.tortilis		
		G. tenax		
		B. minimifolia		
		C. glandulosa		
		I. donaldsonii		
		A. edgeworthii		
		A. horrida		
		3 Commiphora spp.		
		E. cuneata		
		Barleria sp.		
		A. kelleri		
		L. senegalensis		
		C. aucheri		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 10/17

Date: 10/3/79 Observer: Beckett Altitude 320 m.

Site Location - Lat. 6°28' Long. 46°57' Map Sheet No. 22

GENERAL DESCRIPTION Flat, stoney limestone area. Commiphora bush, very poor grass cover.

SOIL - General Silty sand with many limestone fragments becoming larger and more frequent with depth.

Auger Rock at 50 cm plus Colour 7.5 YR 5/6 strong brown

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	low variety
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	10%
- Components:	

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minimifolia		
		2 Commiphora spp.		
		C. glandulosa		
		A. nubica		
		Balanites sp.		
		Boswellia sp.		
		C. heterotricha		
		Aristida sp.		
		S. ruspolianus		
		C. aucheri		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/14	10/17/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 10/19

Date: 10/3/79 Observer: Beckett Altitude 310 m

Site Location - Lat. 6°32' Long. 47°03' Map Sheet No. 23

GENERAL DESCRIPTION Flat rocky limestone area, with sandy hollows. Thin Boscia/Commiphora bush. Poor grass cover.

SOIL - General Very shallow fine sand. Extensive limestone outcrops

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Heavily grazed

VEGETATION - Ground cover 19%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		2 Commiphora spp.	+	
		Boswellia sp.		
		E. cuneata		
		A. horrida		
		C. glandulosa		
		Aristida sp.		
		C. aucheri		
		S. ruspolianus		
		E. cenchroides		

- Growth stages All vegetation very dry. Woody vegetation pre flowering and fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/10	10/19/5	RSP
	11	10/19/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 10/21

Date: 7/4/79 Observer: Beckett Altitude 290 m

Site Location - Lat. 6°29' Long. 47°08' Map Sheet No. 23

GENERAL DESCRIPTION Flat, stoney limestone. Thin to medium thick Acacia/ Commiphora bush. Poor grass cover.

SOIL - General Shallow fine sand over limestone

Auger - Colour 5 YR 5/6 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 36%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. horrida		
		2 Commiphora spp.	All species abundant	
		S. persica		
		I donaldsonii		
		J. villosa		
		B. minimifolia		
		G. tenax		
		Boswellia sp.		
		E. cuneata		
		A. senegal		
		C. glandulosa		
91		G. penicilliata		
		A. kelleri		

- Growth stages Vegetation pre flowering and flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 11/15	10/21/5	RSP

A3

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 11/1

Date: 15/12/78 Observer: Beckett Altitude 290 m

Site Location - Lat. 7°07' Long. 47°27' Map Sheet No. 17

GENERAL DESCRIPTION Flat, sandy, medium thick Acacia bush. Chiefly A. edgeworthii. Poor grass cover, much exposed sand.

SOIL - General Deep fine to medium particled sand. No horizons.

Auger Rock not reached at 110 cm. Colour 2.5 YR 4/8 red

pH 7.4 Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 54%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. tortilis		
		A. edgeworthii		
		I. rotundifolia		
		P. revoilii		
		A. lanata		
		Cassia sp.		
		Indigofera 2 spp.		
		I. ruspolii		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 1/1 -6	11/1/9 - 14	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 11/3

Date: 13/12/78 Observer: Beckett Altitude 310 m

Site Location - Lat. 6°51' Long. 47°31' Map Sheet No. 16

GENERAL DESCRIPTION Flat, sandy, low mixed decideous bush, with medium to poor patchy grass cover.

SOIL - General Deep medium to fine particled sand. No horizons.

Auger Rock not reached at 110 cm Colour 2.5 YR 5/8 red

pH 7.4 Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 58%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		Commiphora 2 spp.	All species abundant	
		A. edgeworthii		
		E. longispina		
		I. rotundifolia		
		Indigofera sp.		
		E. cuneata		
		C. ciliaris		
		L. senegalensis		
		Aristida sp.		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 1/9 - 11	11/3/5 - 7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 11/4

Date: 13/12/79 Observer: Beckett Altitude 320 m

Site Location - Lat. 6°53' Long. 47°34' Map Sheet No.

GENERAL DESCRIPTION Flat, sandy treeless scrub of low shrubs and bushes.

SOIL - General Deep medium to fine particled quartz sand over limestone.

Auger Rock not reached at 140 cm Colour 2.5 YR 6/8 light red

pH 7.5 Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels, sheep and goats

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 56%

- Components

Collection Number	Local Name	Identifiction	Abundance	Use and other information
		E. longispina		
		A. edgeworthii	All species abundant	
		Commiphora 2 spp.		
		P. revoilii		
		I. rotundifolia		
		J. dichtar		
		I. donaldsonii		
		Cassia sp.		
		C. ciliaris		
		Aristida sp.		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 1 12/13	11/4/5 - 6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTION SITE NO. 11/6

Date: 5/3/79 Observer: Beckett Altitude 280 m

Site Location - Lat. $6^{o}54'$ Long. $47^{o}45'$ Map Sheet No.18

GENERAL DESCRIPTION Flat, open, sandy with occasional limestone outcrops. Chiefly low bushes and shrubs.

SOIL - General Medium to coarse particled quartz sand over limestone.

Auger Rock at 50 cm Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Heavily grazed

VEGETATION - Ground cover 48%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minimifolia.		
		A. edgeworhtii		
		J. dichter		
		J. villosa		
		I.ruspolii		
		Indigofera sp.		
		P. revoilii		
		B. edulis		
		C. aucheri		
		Aristida sp.		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 11/7

Date: 5/3/79 Observer: Beckett Altitude 270 m

Site Location - Lat. 6°48' Long. 57°50' Map Sheet No. 18

GENERAL DESCRIPTION Flat, open and sand. A. edgeworthii scrub, medium grass and herb cover. Occasional limestone outcrops.

SOIL - General Deep quartz sand over limestone.

Auger Rock at 110 cm Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Camels
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	39%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii	+	
		C. flaviflora		
34 a	"Ged Bahal"	M. edulis		
34	"Laba alyole"	Cissus sp.		
		I. rotundifolia		
		Indigofera sp.		
		Tiliaceous herbs		
		B. edulis		
		A. sieberana		
		L. senegalensis	+	

- Growth stages Grass flowering, woody vegetation flowering and pre flowering.

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9/32-33	11/7/5-6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 11/12

Date: 7/3/79 Observer: Beckett Altitude 270 m

Site Location - Lat. $6^{o}37'$ Long. $47^{o}25'$ Map Sheet No. 23

GENERAL DESCRIPTION Flat, sandy, open and treeless. Low bushes and shrubs, Aristida/Indigofera scrub, medium grass cover,

SOIL - General Deep quartz sand. Fine to coarse particled sand, becoming redder with depth.

Auger No rock at 120 cm Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	low variety
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	49%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii		
		J. villosa		
		E..cuneata		
	"Chellel"	Cassia sp.		
		I. rotundifolia		
		C. flaviflora		
		E. longispina		
		S. busseanus		
	"Haggeon"	Indigofera sp.	+	
		A. sieberana	+	

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/ 3	11/12/12	RSP E. longispina in foreground
	4	11/12/13	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 11/15

Date: 2/3/79 Observer: Beckett Altitude 200 m

Site Location - Lat. 6°29' Long. 47°49' Map Sheet No. 24

GENERAL DESCRIPTION Gently sloping, sandywith much scattered surface limestone. Boscia/Acacia bush. Poor grass and herb cover.

SOIL - General Medium particled quartz sand over limestone

Auger Rock at 60 cm. Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground Cover	26%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. horrida	+	
		A. edgeworthii	+	
		B. minimifolia	+	
		Cissus sp.		
		I. rotundifolia		
		I. ruspolii		
	"Chellell"	Cassia sp.		
		L. senegalensis		
		D. scindicum		
		A. sieberana		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9/24	11/15/5	Acacia bushes
	25	11/15/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 11/19

Date: 13/4/79 Observer: Beckett Altitude 180 m

Site Location - Lat. 6°09' Long. 47°39' Map Sheet No. 31

GENERAL DESCRIPTION Flat sandy, medium thick Acacia bush. Medium grass and herb cover.

SOIL - General Deep quartz sand, becoming redder with depth.

Auger No rock at 140 cm Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	45%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. reficiens	+	
		A. horrida	+	
		B. orbicularis		
		M. angolensis		
		J. dichtar		
		A. edgeworthii		
		E. cuneata		
		J. villosa		
		I. donaldsonii		
		E. longispina		
106		C. ancistrophora		
		L. senegalensis	+	

- Growth stages Vegetation pre flowering and flowering

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTION SITE NO. 12/3

Date: 7/1/79 Observer: Beckett Altitude 330 m

Site Location - Lat. 7°03' Long. 47°25' Map Sheet No. 11

GENERAL DESCRIPTION Flat to gently undulating sandy with quite extensive limestone ridges. Open bush with very poor grass cover.

SOIL - General Fine sand with a little silt and many small limestone fragments.

Auger Rock at 0 - 60 cm Colour 5 YR 5/6 yellowish red

pH 7.5 Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 20%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. edgeworthii	All species abundant	
		B. minimifolia		
		E. cuneata		
		I. donaldsonii		
		B. orbicularis		
		A. tortilis		
		Commiphora 2 spp.		
		I. ruspolii		
		I. rotundifolia		
		Cassia sp.		
		E. longispina		
		C. flaviflora		
		A. lanata		
		Aristida sp.		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 3/1 - 2	12/3/2 - 3	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 12/5

Date: 19/12/78 Observer: Beckett Altitude 340 m

Site Location - Lat. 7°07' Long. 47°30' Map Sheet No. 12

GENERAL DESCRIPTION Flat, open bush with very poor grass cover, surface covered by mantle of limestone stones.

SOIL - General Shallow medium to fine particled sand with many small limestone stones.

Auger Rock at 0 - 20 cm Colour 7.5 YR 5/6 yellowish red

pH 7.4 Other comments -

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Camels
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	44%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		B. minimifolia		
		Commiphora 2 spp.		
		C. glandulosa		
		I. donaldsonii		
		A. nubica		
		Barleria sp.		
		S. hirtigluma		
		Aristida sp.		
		C. aucheri		
		E. cenchroides		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 1/29, 31	12/5/5 -8	RSP
	V 1/12, 13		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 12/6

Date: 28/1/79 Observer: Beckett Altitude 370 m

Site Location - Lat. 7°17' Long. 47°33' Map Sheet No. 12

GENERAL DESCRIPTION Flat, sandy occasional limestone outcrops. Thin scrub with scattered Boscia. poor grass cover.

SOIL - General Medium particled light orange sand becoming darker below surface.

Auger limestone reached at 40 cm Colour -

pH Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 37%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. horrida		
		C. flaviflora	All species abundant	
		I. donaldsonii		
		B. orbicularis		
		A. lanata		
		Indigofera sp.		
		Blepharis sp.		
		A. kelleri		
		L. senegalensis		
		E. cenchroides		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS Nil

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 12/7

Date: 7/1/79 Observer: Beckett Altitude 340 m.

Site Location - Lat. 7°04' Long. 47°25' Map Sheet No. 11

GENERAL DESCRIPTION Flat to gently undulating, sandy. Thin Acacia bush. Medium grass cover but extensive bare patches.

SOIL - General Fine silty sandy

Auger Rock at 57 cm Colour 7.5 YR 6/6

pH Other comments -

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	43%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. tortilis		
		A. stuhlmannii	+	
		C. flaviflora		
		Commiphora sp.		
		A. edgeworthii		
		E. cuneata		
		I. rotundifolia		
		I. ruspolii		
		Maerua sp.		
		Triumfetta sp.		
		L. senegalensis		
		D. scindicum		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS Nil

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 12/8

Date: 28/1/79 Observer: Beckett Altitude 400 m

Site Location - Lat. 7°16' Long. 47°30' Map Sheet No. 12

GENERAL DESCRIPTION Medium thick Acacia scrub, poor grass cover. Scattered limestone outcrops and boulders.

SOIL - General Medium to coarse grained sand over limestone.

Auger Rock at 40 cm Colour -

pH - Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 51%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		B. orbicularis	All species abundant	
		B. minimifolia		
		A. horrida		
		C. cordofanus		
		Commiphora sp.		
		A. edgeworthii		
		I. ruspolii		
		I. donaldsonii		
	"Chellel"	Cassia sp.		
		A. lanata		
		Aristida sp.		
		E. cenchroides		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS Nil

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 12/9

Date: 8/1/79 Observer: Beckett Altitude 370 m

Site Location Lat. 7°10' Long. 47°28' Map Sheet No. 11

GENERAL DESCRIPTION Slightly undulating sandy soil. Commiphora/Indigofera scrub. Poor grass cover and probably rather over grazed.

SOIL - General Deep, medium to fine particled sand with a little silt, over limestone.

Auger Rock at 96 cm Colour

pH 7.4 Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 44%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		C. flaviflora		
		B. minimifolia		
		A. edgeworthii		
		E. cuneata		
		A. tortilis		
		Commiphora sp.		
		A. reficiens		
		I. ruspolii		
		S. hirtigluma		
		Aristida sp.		
		C. ciliaris		
		L. senegalensis		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS Nil

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 12/10

Date: 8/1/79 Observer: Beckett Altitude 370 m

Site Location - Lat. 7°10' Long. 47°27' Map Sheet No. 11

GENERAL DESCRIPTION Slightly undulating, sandy with occasional limestone ridges. Medium thick low Acacia/Commiphora bush, very poor grass cover with much exposed sand.

SOIL - General Deep medium to fine particled red sand with a little silt, over limestone.

Auger Rock at 128 cm Colour -

pH 7.4 Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Sheep

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 51%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		C. flaviflora	All species abundant	
		A. horrida		
		E. cuneata		
		P. minimifolia		
		A. reficiens		
		A. edgeworthii		
		I. ruspolii		
		I. rotundifolia		
		Aristida sp.		
		S. hirtigluma		
		C. ciliaris		

- Growth stages All vegetation post fruiting.

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 3/8 - 9	12/10/3 - 4	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 12/15

Date: 3/1/79 Observer: Beckett Altitude 360 m

Site Location - Lat. 7°08' Long. 47°43' Map Sheet No. 12

GENERAL DESCRIPTION Flat, sandy, mixed scrub with good grass cover.

SOIL - General Deep fine silty sandwith calcareous nodules.

Auger No rock at 150 cm Colour 5 YR 5/5 yellowish red

pH 7.4 Other comments -

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	54%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. tortilis		
		A. senegal		
		B. orbicularis		
		C. flaviflora		
		J. dichtar		
		C. edulis		
		E. cuneata		
		I. ruspolii		
		Compositae		
		Enteropogon sp.		
		C. ciliaris		
		Aristida sp.		
		L. senegalensis		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 2/22	12/15/4	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 13/1

Date: 30/1/79 Observer: Beckett Altitude 270 m

Site Location - Lat. 7°05' Long. 48°10' Map Sheet No. 13

GENERAL DESCRIPTION 1 km. E. Balli Busle Flat to slightly undulating, sandy and extremely over grazed. Much exposed sand and small banks of wind blown sand.

SOIL - General Fine quartz sand. Surface 20 cm very loose, becoming more consolidated and redder below.

Auger Rock at 60 cm Colour -

pH - Other comments -

SURFACE WATER AND WELLS Borehole at village

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover less than 10%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
	stunted non spiney	B. orbicularis	All species abundant	
		Jatropha sp.		
		Indigofera sp.		
		Cissus sp.		
		Z. hamur		
		C. cinerascens		
		A. lanata		
	Annual	Aristida sp.		
		C. echinatus		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	Nil		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 13/2

Date 30/1/79 Observer: Beckett Altitude 270 m

Site Location - Lat. 7°07' Long. 48°12' Map Sheet No. 13

GENERAL DESCRIPTION Flat to gently undulating red sand. Scattered limestone outcrops. Low shrubs and grass predominate.

SOIL - General Medium to coarse particled sand. Loose mantle becoming more consolidated and redder below.

Auger Rock at 40 cm Colour -

pH Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 44%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		C. flaviflora		
		B. minimifolia		
		B. orbicularis		
		Indigofera sp.		
		J. dichtar		
	Non spiney	Jatropha sp.		
		A. lanata		
		A. sieberana		
		S. hirtigulma		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 5/17 - 18	13/2/5-6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 13/3

Date: 30/1/79 Observer: Beckett Altitude 280m

Site Location - Lat. $7^{o}08'$ Long. $48^{o}18'$ Map Sheet No. 13

GENERAL DESCRIPTION Flat to gently undulating, sandy with occasional limestone ridges. Scattered Dobera trees otherwise lowish shrubs and bushes. Medium to poor grass cover.

SOIL - General Medium to coarse particled sand. Surface loose becoming more consolidated and redder below.

Auger Rock at 60 cm Colour -

pH Other comments -

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	47%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		D. glabra		
		B. orbicularis		
		A. edgeworthii		
		Indigofera sp.		
		A. nubica		
		Blepharis sp.		
		A. lanata		
		A. kelleri		
		Aristida sp.		
		S. hirtigluma		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 5/20	13/3/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 13/4

Date: 31/1/79 Observer: Beckett Altitude 260 m

Site Location - Lat. $7^{o}07'$ Long. $48^{o}20'$ Map sheet No. 13

GENERAL DESCRIPTION Flat to very gently undulating. Scattered Dobera glabra trees, medium herb and grass cover. Scattered limestone outcrops.

SOIL - General Shallow fine to medium particled sand over limestone.

Auger Rock at 20 cm. Colour -

pH - Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 33%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		D. glabra		
		I. ruspolii		
		Indigofera sp.		
		Oldenlandia sp.		
		J. dichtar		
		C. flaviflora		
		E. cuneata		
		Z. hamur		
		Jatropha sp.		
		Cucumis sp.		
		C. cinerascens		
		A. kelleri		
		A. sieberana		
		T. spathaceus		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS Nil

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 13/15

Date: 2/1/79 Observer: Beckett Altitude 300 m

Site Location - Lat. 7°05' Long. 47°55' Map Sheet No. 11

GENERAL DESCRIPTION Flat, sandy, medium scrub with scattered limestone rocks and extensive bare patches. Poor grass cover.

SOIL - General Deep fine sand. No horizons.

Auger Rock not reached at 140 cm Colour 5YR 5/6 yellowish red

pH Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 28%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. horrida		
		Commiphora sp.		
		D. glabra	All species abundant	
		I. ruspolii		
		I. rotundifolia		
	non spiney	J. villosa		
		E. cuneata		
		Ipomea sp.		
		Aristida sp.		
		S. hirtigluma		
		L. senegalensis		
		C. ciliaris		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS Nil

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 13/17

Date: 29/1/79 Observer: Beckett Altitude 280 m

Site Location - Lat. 7°06' Long. 48°02' Map Sheet No. 13

GENERAL DESCRIPTION Flat, open, and sandy with occasional limestone outcrops. Low shrubs and bushes scattered with Abizzia and Boscia trees. Poor grass cover.

SOIL - General Medium to coarse particled sand with scattered surface limestone.

Auger Rock at 60 cm Colour -

pH - Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 42%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		B. minimifolia		
		A. anthelmintica		
		E. cuneata		
	"Digtiri" non spiney	J. villosa	All species abundant	
		Cassia sp.		
	"Daba leidshir"	- Shrub		
		I. ruspolii		
		Blepharis sp.		
		A. lanata		
		A. edgeworthii		
		C. flaviflora		
		L. senegalensis		
		A. sieberana		
		S. hirtigluma		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 5/14-15	13/17/5-7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 13/18

Date: 29/1/79 Observer: Beckett Altitude 290 m

Site Location - Lat. 7°05' Long. 48°02' Map Sheet No. 13

GENERAL DESCRIPTION Flat, and open chiefly low shrubs and herbs with scattered Boscia trees. Poor grass cover. Scattered limestone rocks on surface

SOIL - General Medium to fine sand over limestone.

Auger Rock at 15 cm Colour -

pH - Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 41%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		B. minimifolia		
		S. persica		
		I. ruspolii	+	
		Cassia sp.		
		C. flaviflora		
		Commiphora sp.		
		E. cuneata		
		S. busseanus		
		Blepharis sp.		
	"Daba-leidshir"	Shrub		
		A. sieberana		
		L. senegalensis		
		C. aucheri		
		E. cenchroides		
		S. hirtigluma		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS Nil

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 13/19

Date: 3/1/79 Observer: Beckett Altitude 240 m.

Site Location - Lat. 7°05' Long. 48°19' Map Sheet No. 13

GENERAL DESCRIPTION Flat to gently undulating with limestone outcrops. Mainly low shrubs but scattered Acacia and Balanites spp. Medium to poor grass cover.

SOIL - General Medium particled sand over limestone

Auger Rock at 20 cm Colour -

pH Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 46%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		C. flaviflora		
		Commiphora sp.	All species abundant	
		J. villosa		
		J. dichtar		
		E. cuneata		
		S. busseanus		
		D. glabra		
	low bush "Adad"	A. paradoxa		
		A. edgeworthii		
		C. cinerascens		
		Indigofera 2 spp.		
77	"Dufraud"	Cleome sp.		
		A. lanata		
		L. senegalensis		
		Aristida sp.		
		A. sieberana		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 5/28-29	13/19/5-6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 13/20

Date: 30/1/79 Observer: Beckett Altitude 240 m

Site Location - Lat. 7°04' Long. 48°21' Map sheet No. 13

GENERAL DESCRIPTION Area of shallow sand on limestone. Open vegetation, medium grass cover.

SOIL - General Shallow coarse to fine particled quartz sand. Surface very loose becoming more compact and redder below.

Auger Rock at 50 cm Colour -

pH Other comments -

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	42%

- Components

Collection Number	Local Name	Identification	Abundance	Use and otehr information
		B. orbicularis	All species abundant	
		B. minimifolia		
		E. cuneata		
		J. dichtar		
		J. villosa		
		D. glabra		
		Commiphora sp.		
		S. busseanus		
		A. lanata		
		C. cinerascens		
		A. kelleri		
		Aristida sp.		
		T. spathaceus		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 5/24-25	13/20/5-6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 13/20

Date: 27/2/79 Observer: Beckett Altitude 90 m

Site Location - Lat. 6°38' Long. 48°45' Map Sheet No. 26

GENERAL DESCRIPTION Flat, rising gently in N.W. Sandy with pinkish limestone outcrops. Scattered Boscia otherwise low shrubs and herbs.

SOIL - General Shallow fine quartz sand over pinkish limestone.

Auger Rock at 0 - 20 cm. Colour Reddish yellow

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Very occasional
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	39%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minimifolia		
		B. orbicularis		
	"Lahgali"	A. leucospira		
		A. edgeworthii		
		E. cuneata		
	"Cahn Sole"	Cassia sp.		
		L. gluntinosa		
		S. busseanus		
		J. villosa		
		I. ruspolii		
		Indigofera sp.		
	small tussocky	Euphorbia sp.		
20	"Leb"	Fagonia sp.		
21	"Kadatol"	Barleria sp.		
22	"Bur Bur"	Rubiaceous herb		
22	"Isteer"	Iphonia sp.		
		Aristida sp.		
		L. senegalensis		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 8/6	13/20/11	RSP
	7	13/11/12	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 13/21

Date: 30/1/79 Observer: Beckett Altitude 230 m

Site Location - Lat. 7°02' Long. 48°19' Map Sheet No. 13

GENERAL DESCRIPTION Flat, sandy, open with occasional limestone ridges and scattered surface rocks. Acacia reficiens the dominant bush.

SOIL - General Coarse to fine particled sand. Surface loose becoming more consolidated and redder below.

Auger Rock at 55 cm Colour -

pH - Other comments -

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	39%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. reficiens		
		A. edgeworthii		
		B. orbicularis		
		E. cuneata		
		Indigofera sp.		
	very low bush "Adad"	A. paradoxa		
		I. rotundifolia		
		C. cinerascens		
		L. senegalensis		
66		Aristida sp.		
		T. spathaceus		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 5/22-23	13/21/5-6	RSP with scattered Acacia reficiens bushes

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 13/23

Date 4/2/79 Observer: Beckett Altitude 200 m

Site Location: Lat. 7°17' Long. 49°04' Map Sheet No. 15

GENERAL DESCRIPTION Flat, open and exposed. Scattered Acacia sp., chiefly low shrubs. Poor grass cover. Much exposed sand and limestone pavements.

SOIL - General Shallow fine sand with coarse quartz particles. Surface 5 cm rather loose slightly more compact below.

Auger Rock at 15 cm Colour 5 YR 5/8 yellowish red

pH - Other comments No moisture. Roots to 15 cm.

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional low type

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels and sheep near site

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 32%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
44		Acacia sp.		
		A. leucospira	All species abundant	
72	"Chaor"	Cassia sp.		
44		E. cuneata		
		Commiphora sp.		
		L. glutinosa		
		Indigofera 2 spp.		
		J. villosa		
		A. edgeworthii		
	small	Jatropha sp.		
44	"Madah megag"	small shrub		
		Aristida sp.		
		C. aucheri		
		C. ciliaris		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 6/27-28	13/23/3-4	RSP and Acacia leucospira on limestone pavement.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 13/24

Date: 17/3/79 Observer: Beckett Altitude 240 m

Site Location - Lat. $6^{o}59'$ Long. $48^{o}11'$ Map Sheet No. 19

GENERAL DESCRIPTION Flat to gently undulating, sandy with limestone outcrops. Low bushes and shrubs, poor grass cover.

SOIL - General Shallow medium particled sand over limestone.

Auger Rock at 20 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

OTHERS Nil

VEGETATION - Ground cover 53%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
40	"War-a-wa"	Acacia sp.		
		L. glutinosa		
		E. cuneata		
		J. dichtar		
		I. ruspolii		
		Indigofera sp.		
		C. aff.flaviflora		
		Triumphetta sp.		
		C. cinerascens		
		L. senegalensis		
		Aristida sp.		
38	"Yeris"	T. spatheus		
		A. sieberana		

- Growth stages Woody vegetation pre flowering, grass flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/15	13/24/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTION SITE NO. 13/25

Date: 17/3/79 Observer: Beckett Altitude 160 m

Site Location - Lat. 6°49' Long. 48°24' Map Sheet No. 19

GENERAL DESCRIPTION Flat, open, treeless, low bushes and shrubs. Poor grass cover, medium herb cover.

SOIL - General Fine quartz sand.

Auger Rock at 20 cm Colour 5YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 62%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. orbicularis	All species abundant	
		J. villosa		
		Commiphora sp.		
		J. dichtar		
		A. edgeworthii		
		Indigofera sp.		
		Melhania sp.		
		Malvaceous herb		
		L. senegalensis		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/22	13/25/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 13/31

Date: 26/2/79 Observer: Beckett Altitude 90 m

Site Location - Lat. $6^{O}35'$ Long. $48^{O}43'$ Map Sheet No. 26

GENERAL DESCRIPTION Flat, open, chiefly low bushes and shrubs, with scattered Boscia trees. Poor grass cover and scattered surface rocks.

SOIL - General Shallow quartz sand over pinkish limestone.

Auger Rock at 0 - 10 cm. Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 23%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minutifolia		
		A. leucospira	All species abundant	
	very low bush "Adad"	A. paradoxa		
		L. glutinosa		
	small tussocky	Euphorbia sp.		
	"Bur Bur"	Rubiaceous herb		
		I. ruspolii		
		Barleria sp.		
		A. kelleri		
		Aristida sp.		
		C. aucheri		
		Unidentified sedge		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS Serial Number Reference Number Contents

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 14/1

Date: 7/3/79 Observer: Beckett Altitude 260 m

Site Location - Lat. 6°31' Long. 47°26' Map Sheet No. 23

GENERAL DESCRIPTION Flat, open, sandy, occasional limestone outcrops. Acacia/Indigofera scrub. Poor grass cover

SOIL - General Medium to coarse quartz sand over limestone.

Auger Rock at 55 cm Colour 10 R 4/8 red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	low variety
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	25%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. orbicularis		
		A. edgeworthii	+	
		E. cuneata		
		M. edulis		
		Indigofera sp.		
		Crotolaria sp.		
		I. ruspolii	+	
		A. sieberana		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/ 5	14/1/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 14/6

Date 25/2/79 Observer: Beckett Altitude 270 m.

Site Location - Lat. 6°27' Long. 47°54' Map Sheet No. 24

GENERAL DESCRIPTION Flat, sandy, treeless, low bushes and shrubs, grass rather patchy medium to poor cover. Much exposed sand.

SOIL - General Fine to coarse particled sand with quartz mantle.

Auger Rock at 90 cm Colour 10 R 4/8 red

pH Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 23%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii	+	
6	Very low bush "Adad"	A. paradoxa		
		I. rotundifolia		
		Indigofera sp.		
		A. sieberana	+	
		Aristida sp.	+	

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 7/18 - 19	14/6/5-6	Note variability of grass cover

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 14/9

Date: 5/3/79 Observer: Beckett Altitude 270 m

Site Location - Lat. 6°44' Long. 47°38' Map Sheet No. 18

GENERAL DESCRIPTION Flat, open, treeless and sandy with occasional limestone ridges. Aristida/Indigofera scrub. Good herb and grass cover.

SOIL - General Deep fine to coarse particled quartz sand. Becoming redder with depth.

Auger No rock at 120 cm. Colour 10 R 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels

CROPPING Nil

OTHERS This and adjoining areas burnt

VEGETATION - Ground cover 55%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
222	"Haggeen"	Indigofera sp.	+	
		B. edulis		
		A. sieberana	+	
		Aristida sp.		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9/28	14/9/5	Area burnt
	29	14/9/6	Limit of burning in middle ground.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 14/13

Date: 5/3/79 Observer: Beckett Altitude 250 m

Site Location - Lat. $6^{o}42'$ Long. $47^{o}46'$ Map Sheet No. 18

GENERAL DESCRIPTION Flat, open and sandy. Aristida grassland with scattered A. edgeworthii bushes. Good grass cover, poor herb cover. Much surface grass litter.

SOIL - General Medium particled quartz sand over limestone. Becoming redder with depth.

Auger Rock at 40 cm Colour 10 R 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Scattered low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 48%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii	+	
		B. orbicularis		
		Indigofera sp.		
		C. cinerascens		
		Cissus sp.		
		A. sieberana	+	

- Growth stages All vegetation pre flowering

PHOTOGRAPHS Serial Number Reference Number Contents

No photpgraphs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 14/18

Date: 26/2/79 Observer: Beckett Altitude 200 m.

Site Location - Lat. 6°33' Long. 48°03' Map Sheet No. 25

GENERAL DESCRIPTION Open, slightly undulating. Treeless, good herb/grass cover, scattered low bushes.

SOIL - General Deep fine sand with coarse quartz mantle.

Auger No rock at 120 cm Colour 10 R 4/8 red

pH - Other comments No moisture good root development.

SURFACE WATER AND WELLS Nil

TERMITARIA Scattered low type

EROSION Nil

DUNES Nil

GRAZING ANIMALS Soemerring's gazelle near site

CROPPING Nil

OTHERS Not heavily grazed.

VEGETATION - Ground cover 51%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. orbicularis		
		L. glutinosa		
13	"Gabra"	Commiphora sp.		
		Indigofera 2 spp.		
		Crotolaria sp.		
		Melhania sp.		
		P. revoilii		
		A. sieberana	+	
		L. senegalensis	+	
		Enteropogon sp.		
11a		Sedge		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 7/29 -30	14/18/5-6	RSP and Commiphora sp.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 15/1

Date: 5/3/79 Observer: Beckett Altitude 270 m

Site Location - Lat. $6^{o}55'$ Long. $47^{o}49'$ Map Sheet No. 18

GENERAL DESCRIPTION Gently sloping stoney limestone area. Thin Acacia/ Balanites bush. Medium herb and grass cover.

SOIL - General Very shallow fine sand over limestone.

Auger 0 - 10 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Goats

CROPPING Nil

OTHERS Area heavily grazed

VEGETATION - Ground cover 47%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii	+	
		B. orbicularis	+	
		S. persica		
		J. villosa		
		E. cuneata		
		C. erianthera		
		J. dichter		
		B. minimifolia		
		C. cordofanus		
		E. longispina		
		I. ruspolii		
		B. edulis		
		A. kelleri		

- Growth stages All vegetation pre flowering.

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9/37	15/1/5	A. edgeworthii bushes in leaf

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 15/2

Date: 17/3/79 Observer: Beckett Altitude 220 m

Site Location - Lat. 6°55' Long. 48°15' Map Sheet No. 19

GENERAL DESCRIPTION Flat to slightly undulating, low bushes and scattered Balanites. Medium grass cover - occasional limestone outcrops.

SOIL - General Generally deep; medium particled sand.

Auger No rock at 140 cm Colour 2.5 YR 5/6 red

pH - Other comments.

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	50%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. orbicularis		
		A. edgeworthii		
		A. senegal		
		A. aff. senegal		
		Commiphora sp.		
		I. ruspolii		
		Indigofera sp.		
		Tiliaceous herbs		
		B. edulis		
		L. senegalensis		
		Enteropogon sp.		

- Growth stages Vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/14	15/2/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 15/2

Date: 17/3/79 Observer: Beckett Altitude 220 m

Site Location - Lat. 6°55' Long. 48°15' Map Sheet No. 19

GENERAL DESCRIPTION Flat to slightly undulating, low bushes and scattered Balanites. Medium grass cover - occasional limestone outcrops.

SOIL - General Generally deep; medium particled sand.

Auger No rock at 140 cm Colour 2.5 YR 5/6 red

pH - Other comments.

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	50%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. orbicularis		
		A. edgeworthii		
		A. senegal		
		A. aff. senegal		
		Commiphora sp.		
		I. ruspolii		
		Indigofera sp.		
		Liliaceous herbs		
		B. edulis		
		L. senegalensis		
		Enteropogon sp.		

- Growth stages Vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/14	15/2/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 15/5

Date: 17/3/79 Observer: Beckett Altitude 180 m

Site Location- Lat. 6°49' Long. 48°19' Map Sheet No. 19

GENERAL DESCRIPTION Flat, open, sandy, low bushes and scattered trees, medium grass cover.

SOIL - General Deep fine quartz sand. No horizons

Auger Rock at 110 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	65%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
39	"Chih"	M. angolensis		
		B. orbicularis	All species abundant	
		A. edgeworthii		
	low bush"Adad"	Acacia sp.		
	"Guweh"	Commiphora sp.		
144	"Cahn sole"	Cassia sp.		
		L. glutinosa		
		Melhania sp.		
		Indigofera sp.		
		C. cinerascens		
		Tiliaceous herbs		
		L. senegalensis		
		Enteropogn sp.		

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/21-22	15/5/5-6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 16/1

Date: 19/4/79 Observer: Beckett Altitude 330 m

Site Location - Lat. 5°33' Long. 46°00' Map Sheet No. 42

GENERAL DESCRIPTION Flat, rocky, medium thick Acacia/Commiphora bush. Poor grass and herb cover.

SOIL - General Shallow, silty sand with many small limestone fragments

Auger - Colour 5 YR 5/6 yellowish red

pH - Other Comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 40%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		E. cuneata		
		G. penicilliata		
		2 Commiphora spp.	+	
		Lannea sp,	+	
		Boswellia sp,		
		G. tenax		
		A. nubica		
		C. glandulosa		
		Gossypium sp.		
		A. edgeworthii		
		A. horrida	+	
		A. senegal	+	
		A. kelleri		
		Aristida sp.		
		C. aucheri		

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 12/22	16/1/5	RSP
	23	16/1/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 16/2

Date: 19/4/79 Observer: Beckett Altitude

Site Location - Lat. $5^{o}34'$ Long. $45^{o}57'$ Map Sheet No. 41

GENERAL DESCRIPTION Flat, rocky, medium thick Acacia/Commiphora bush. Poor grass and herb cover.

SOIL - General Shallow, fine silty sand.

Auger -

pH -

Colour 5 YR 5/6 yellowish red

Other Comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 56%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		M. angolensis		
		C. glandulosa		
		A. horrida	+	
		A. senegal	+	
		A. aff. tortilis		
		I. donaldsonii		
		B. minimifolia		
		B. fructicosum		
134	"Ho Hob"	G. penicilliata		
		C. cordofanus		
		Boswellia sp.	+	
		2 Commiphora spp.		
		I. ruspolii		
135		G. tenax		
		G. hababensis		
136	Cyperaceae			
		A. kelleri		
		D. scindicum		

- Growth stages Woody vegetation flowering and pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 12/19	16/2/5	RSP
	20	16/2/6	RSP
	21	16/2/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 16/3

Date: 19/4/79 Observer: Beckett Altitude 280 m

Site Location - Lat. 5°32' Long. 46°07' Map Sheet No. 42

GENERAL DESCRIPTION Rocky limestone area, medium thick Acacia/Commiphora bush, poor herb and grass cover.

SOIL - General Very shallow fine silty sand. Very small rocks present.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 40%

- Components:

Collection Number	Local Names	Identification	Abundance	Use and other Information
		A. senegal		
		A. horrida	+	
129	"Fulai"	Acacia sp.		
		E. cuneata		
		C.erianthera		
131		Lannea sp.		
		I. donaldsonii		
		Commiphora sp.	+	
		B. fructicosum		
	small leaved	Jatropha sp.		
		C. glandulosa		
		A. aff. tortilis		
		G. tenax		
		M. angolensis		
		Euphorbia sp.		
		A. kelleri		
		C. aucheri		

- Growth stages Woody vegetation flowering

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 16/4

Date: 19/4/79 Observer: Beckett Altitude 300 m

Site Location - Lat. $5^{o}40'$ Long. $46^{o}07'$ Map Sheet No. 35

GENERAL DESCRIPTION Flat to very gently sloping, very rocky, medium thick Acacia/Commiphora bush, poor grass and herb cover.

SOIL - General Very shallow sand on limestone.

Auger - Colour 5 YR 5/6 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 30%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
131		Lannea sp.	+	
133		Boswellia sp.	+	
		2 Commiphora spp.	+	
		B. minimifolia .		
		G, tenax		
		G. penicilliata		
		I. donaldsonii		
	"Fulai"	Acacia sp,		
		C. glandulosa		
		A. senegal	+	
132		B. fructicosum		
		A. horrida		
130		Adenium sp.		
		Barleria sp.		
		A. kelleri		
		C. aucheri		
		Sporobolus sp.		

- Growth stages Woody vegetation flowering and pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 12/16	16/4/5	RSP
	17	16/4/6	RSP
	18	16/4/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 16/5

Date: 18/4/79 Observer: Beckett Altitude 290 m.

Site Location - Lat. 5°46' Long. 46°25' Map Sheet No. 35

GENERAL DESCRIPTION Flat sandy, low bushes, scattered A. tortilis. Medium grass cover, poor herb cover. Occasional limestone ridges.

SOIL - General Shallow fine to medium particled sand over limestone.

Auger - Colour 5 YR 5/6 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 50%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. tortilis		
		A. edgeworhtii	+	
		C. flaviflora		
		A. horrida	+	
		C. ancistrophora		
		Commiphora sp.		
125		Maerua edulis		
		B. orbicularis		
		I. ruspolii	+	
		A. kelleri		
		C. ciliaris		
		A. sieberana		
		L. senegalensis		
		Tetrachaete sp.		
		Aristida sp.		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 16/6

Date: 18/4/79 Observer: Beckett Altitude 290 m

Site Location - Lat. 5°43' Long. 46°25' Map Sheet No. 35

GENERAL DESCRIPTION Flat, very rocky limestone area. Medium thick Acacia bush, poor grass cover.

SOIL - General Very shallow, very fine quartz sand.

Auger - Colour 7.4 yR 5/6 brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground Cover 30%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. reficiens	+	
		E. cuneata	+	
		B. minimifolia	+	
		A. horrida	+	
		Anisotes trisulcus		
		A. nubica		
		C. glandulosa		
		C. ancistrophora		
		A. tortilis		
		Commiphora sp.		
		I. ruspolii		
		A. kelleri		
		Enteropogon sp.		
		Aristida sp.		

- Growth stages All vegetation pre flowering and extremely dry.

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 17/2

Date: 3/2/79 Observer: Beckett Altitude 160 m.

Site Location: Lat. 7°09' Long. 48°53' Map Sheet No. 14

GENERAL DESCRIPTION Open, gently undulating and sandy. Treeless, mainly low shrubs and herbs to about 70cm. Poor grass cover, medium herb cover Much exposed sand, surface scattered with small rocks and stones.

SOIL - General Medium to fine particled sand with many small stones. Surface 10 cm rather loose, more compacted below.

Auger Rock at 25 cm Colour 5YR 5/8 yellowish red

pH 7.2 Other comments No moisture present

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels and dibatag

GROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 14%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		E. cuneata	All species abundant	
		Indigofera sp.		
		Commiphora sp.		
		Olenandia sp.		
		Cassia sp.		
		C. aucheri		
		A. sieberana		

- Growth stages All vegetation pre flowering.

PHOTOGRAPHS	Serial Number	Reference Number	Contents
		17/2/3-4	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 17/3

Date: 3/2/79 Observer: Beckett Altitude 160 m.

Site Location - Lat. 7°10' Long. 48°54' Map Sheet No. 14

GENERAL DESCRIPTION Very open, gently undulating, sandy hollows and rocky limestone ridges. Almost treeless, mainly low shrubs and herbs, grass cover poor. Much exposed sand and limestone.

SOIL - General Fine to coarse particled sand, shallow and unconsolidated.

Auger Rock at 10 cm Colour 5YR 5/8 yellowish red

pH 7.3 Other comments No moisture, roots to 10 cm

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Sand easily moved by wind

VEGETATION - Ground Cover 20%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. edgeworthii		
		Commiphora sp.		
		L. gluntinosa		
144	"Cahn sole"	Cassia sp.		
		J. villosa		
		E. cuneata		
		Indigofera sp.		
		J. dichtar		
		A. sieberana		
		L. senegalensis		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 6/22 - 23	17/3/3-4	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 174

Date: 4/2/79 Observer: Beckett Altitude 190 m

Site Location - Lat. 7°13' Long. 48°54' Map Sheet No. 14

GENERAL DESCRIPTION Open, undulating sandy hills. Treeless, vegetation mainly of low bushes and shrubs, very poor grass cover, much exposed sand and some scattered surface rocks.

SOIL - General Fine to medium particled sand, unconsolidated with many small rocks beneath surface.

Auger Large rocks at 30 cm Colour 5 YR 5/8 yellowish red

pH 7.3 Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels

CROPPING Nil

OTHERS Much wind blown sand.

VEGETATION - Ground cover 14%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		E. cuneata	All species abundant	
		Indigofera sp.		
		J. villosa		
		Commiphora 2 spp.		
		L. glutinosa		
72		Cassia sp.		
144		Cassia sp.		
		Aristida sp.		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 6/34-35	17/4/3-4	Note pillar effect of sand around vegetation

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 17/6

Date: 3/2/79 Observer: Beckett Altitude 160 m

Site Location - Lat. 7°09' Long. 48°54' Map Sheet No. 14

GENERAL DESCRIPTION Very open, flat to gently undulating sandy hills, and stone strewn limestone ridges. Almost treeless, chiefly low bushes and shrubs. Poor grass cover with much exposed sand.

SOIL - General Shallow coarse to fine particled sand. Poor root development, no horizons.

Auger -

pH 7.2

Colour 5YR 5/8 yellowish red

Other Comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 28%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. edgeworthii		
		E. cuneata	All species abundant	
		Indigofera sp.		
	scrambling	Commiphora sp.		
		Olenandia sp.		
		I. rotundifolia		
		Aristida sp.		
		Enteropogon sp.		
		C. aucheri		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
		17/6/3-4	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 18/1

Date: 17/3/79 Observer: Beckett Altitude 80 m

Site Location - Lat. 6°49' Long. 48°48' Map Sheet No. 20

GENERAL DESCRIPTION Flat to slightly undulating, shallow sand with extensive limestone outcrops and scattered surface rocks. Treeless poor grass and herb cover.

SOIL - General Shallow, fine quartz sand over pink limestone.

Auger - Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 30%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
40		Acacia sp.		
		A. edgeworthii	All species abundant	
		E. cuneata		
	Low bush "Adad"	Acacia sp.		
42		Convolvulus sp.		
		Heliotropium sp.		
		Barleria sp.		
		I. ruspolii		
		Fagonia sp.		
		Aristida sp.		
		L. senegalensis		
		Enteropogon sp.		
	Unidentified	sedge		

- Growth stages Vegetation flowering and pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO 18/2

Date: 18/3/79 Observer: Beckett Altitude 90 m

Site Location - Lat. 6°54' Long. 48°55' Map Sheet No. 20

GENERAL DESCRIPTION Flat to very gently undulating, open. Chiefly low shrubs and herbs but occasional Boscia sp. Grass cover very poor. Pink limestone outcrops and scattered surface rocks.

SOIL - General Shallow, fine quartz sand.

Auger Rock at 0 - 20 cm. Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE AND WATER WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 40%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minimifolia	All species abundant	
		B. orbicularis		
		E. cuneata		
		Commiphora sp.		
43	"Maga-a-fur"	Heliotropium sp.		
	"Bur-bur"	Rubiaceous herb		
	small tussocky	Euphorbia sp.		
	"leb"	Fagonia sp.		
		I. ruspolii		
		Barleria sp.		
44	"Maga-Megag"			Poisonous to stock
		L. senegalensis		
		Aristida sp.		
		C. aucheri		

- Growth stages Vegetation flowering and pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/24	18/2/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 18/7

Date: 18/3/79 Observer: Beckett Altitude 90 m

Site Location - Lat. 7°03' Long. 49°04' Map Sheet No. 15

GENERAL DESCRIPTION Flat to gently undulating, extensive limestone outcrops. Poor grass cover.

SOIL - General Shallow fine unconsolidated sand over limestone.

Auger Rock at 0 - 10 cm Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Heavily grazed

VEGETATION - Ground cover 35%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		D. glabra	All species abundant	
		B. minimifolia		
		A. edgeworthii		
		M. angolensis		
		E. cuneata		
		S. busseanus		
		Rynchosia sp.		
		Commiphora sp.		
		D. glomerata		
		Triumphetta sp.		
		C. cinerascens		
		I. ruspolii		
		Indigofera sp.		
		Barleria sp.		
		Aristida sp.		
		T. spathaceus		
		C. aucheri		
		L. senegalensis		
		Enteropogon sp.		
		A. sieberana		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/29	18/7/1	RSP

N.B. This site is not marked on the 1:100,000 or 1:250;000 maps, but is located at the junction between the Jirriban/Garad Rd. and North South trace line.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 19/5

Date: 18/3/79 Observer: Beckett Altitude 60 m

Site Location - Lat. 6°54' Long. 49°04' Map Sheet No.21

GENERAL DESCRIPTION Flat, to very gently undulating, open, low bushes and shrubs with occasional trees, medium grass cover.

SOIL - General

Auger - Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 43%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		M. angolensis	All species abundant	
		B. minimifolia		
		D. glabra		
		E. cuneata		
		Convolvulus sp.		
	small tussocky	Euphorbia sp.		
		I. ruspolii		
		D. glomerata		
	Unidentified	Chlorideae		
		D. scindicum		
		C. aucheri		
	"Ramas" unidentified	sedge		
		Entoropogon sp.		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/26	19/5/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 19/6

Date: 18/3/79 Observer: Beckett Altitude 90 m

Site Location - Lat. 7°01' Long. 49°08' Map Sheet No. 15

GENERAL DESCRIPTION Flat to gently undulating, sandy with some limestone outcrops. Poor grass cover.

SOIL - General Fine to medium particled quartz sand. Loosely consolidated

Auger Rock at 0 - 40 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Occasional
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Heavily grazed
VEGETATION - Ground cover	30%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		M. angolensis		
		E. cuneata		
		A. aff. tortilis		
		A. edgeworhtii	All species abundant	
	small	Euphorbia sp.		
		I. ruspolii		
		Convolvulus sp.		
	Unidentified	sedge		
		C. aucheri		
		Enteropogon sp.		
		Coelachyrum stoloniferum		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10 /30	19/6/1	RSP

N.B. This site is not marked on 1:100,000 or 1:250,000 maps, but is next to the Jirriban/Garad Rd.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 20/2

Date: 18/3/79 Observer: Beckett Altitude 60 m

Site Location - Lat. 6°54' Long. 49°06' Map Sheet No. 21

GENERAL DESCRIPTION Flat to undulating, open scattered Maerua and Acacia trees. Medium grass cover. Limestone outcrops and many surface stones.

SOIL - General Shallow medium particled quartz sand, unconsolidated.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 58%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		M. angolensis		
45		A. aff. tortilis	+	
		B. orbicularis		
		J. villosa		
		C. cinerascens		
		A. lanata		
		Commiphora sp.		
	small	Euphorbia sp.		
		Convolvulus sp.		
		L. senegalenis		
		H. contortus		
		C. aucheri	+	
		C. ciliaris		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/27	20/2/5	RSP
	28	20/2/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 20/3

Date: 19/3/79 Observer: Beckett Altitude 30 m

Site Location - Lat. 6°58' Long. 49°17 Map Sheet No. 21

GENERAL DESCRIPTION Pink limestone plateau with sandy bush filled hollows. Area dominated by A. aff.tortilis. Poor grass and herb cover.

SOIL - General Very shallow quartz sand on limestone.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Area very heavily grazed

VEGETATION - Ground cover

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
	"Gora"	A. aff.tortilis	+	
47 a	"Yo-oh"	E. melanacantha		
		A. edgeworthii		
		C. aucheri		
		Coelachyrum stoloniferum		
		Eragrostis sp.		

- Growth stages Woody vegetation flowering and fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 11/4-6	20/3/6-11	RSP and E. melanacantha
	J 10/31,32		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 20/4

Date: 27/2/79 Observer: Beckett Altitude 40 m

Site Location - Lat. 6°38' Long. 49°03' Map Sheet No. 27

GENERAL DESCRIPTION Flat to very gently undulating sandy, treeless, low shrubs andhherbs predominate.

SOIL - General Very fine dusty sand with calcareous concretions on pinkish limestone.

Auger Rock at 40 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Oryx and Soemerings gazelle
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	36%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		E. cuneata	+	
	Tussocky	Euphorbia sp.	+	
		A. edgeworthii		
		Blepharis sp.		
24	Spreading Shrublet			
25		H. contortus		
		C. aucheri		
		D. scindicum		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 8/19-20	20/4/5-6	

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 21/1

Date: 28/2/79 Observer: Beckett Altitude 5 - 10 m

Site Location - Lat. 6°42' Long. 49°11' Map Sheet No. 21

GENERAL DESCRIPTION Open, treeless coastal plain. Small dunes at sea front opening to herbaceous coastal plain.

SOIL - General Deep coarse coralline sand.

Auger No rock at 140 cm Colour 7.5 YR 7/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Small sea front dunes 8 to 10 m.

GRAZING ANIMALS Gazelle

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 40%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
26a	"Anka garo"	Tephrosia sp.		
26b		Aerva sp.	All species abundant	
26c		Jatropha obbiadensis		
26d		A. hispidissima		
26e	"Gersebe"	Sedge		
26f	"Daba da moreh"	P.pinifolium		
26g		Launea sp.		
26h	"Henloue"	U. setulosa		

-Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	33 J 8/23 6	21/1/5	RSP
	26	21/1/6	RSP
	27	21/1/7	Pt. pinifolium ondenes
	28	21/1/8	RSP
	29	21/1/9	Sedge on dunes
	30	21/1/10	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTION SITE NO. 21/6

Date: 19/3/79 Observer: Beckett Altitude 10 m

Site Location - Lat. $6^{o}50'$ Long. $49^{o}15'$ Map Sheet No. 21

GENERAL DESCRIPTION Open, treeless, coastal plain. Good grass and herb cover.

SOIL - General Deep

Auger -

pH -

Colour -

Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	50%

- Components:

Collection Number	Local	Identification	Abundance	Use and other Information
		Heliotropium sp.	All species abundant	
26 a	Prostrate herb	Tephrosia sp.		
360		Aristida sp.		
		Coelachyrum steloniferum		
385		P. pinifolium		

- Growth stages Grass flowering and pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	no photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 23/1

Date: 18/3/79 Observer: Beckett Altitude 90 m

Site Location - Lat. 6°49' Long. 48°54' Map Sheet No. 20

GENERAL DESCRIPTION Flat to gently undulating, sandy with occasional limestone outcrops. Open, treeless, poor grass cover medium herb cover.

SOIL - General Shallow, fine quartz sand over pinkish limestone, unconsolidated.

Auger Rock at 10 - 20 cm. Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	low variety
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	49%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii		
144	"Cahn-sole"	Cassia sp.	All species abundant	
		A. leucospira		
		Commiphora sp.		
		E. cuneata		
		L. gluntinosa		
	small tussocky	Euphorbia sp.		
		Fagonia sp.		
		Barleria sp.		
		I. ruspolii		
		Convolvulus sp.		
72	"Sagara Sol"	Cassia sp.		
		Tiliaceous herbs		
		C. aucheri		
		Aristida sp.		
		Enteropogon sp.		
	Unidentified	Chlorideae		

- Growth Stages Vegetation flowering and pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 23/2

Date: 18/3/79 Observer: Beckett Altitude 80 m

Site Location - Lat. 6°54' Long. 48°59' Map Sheet No. 20

GENERAL DESCRIPTION Flat to gently undulating, low shrubs and herbs almost treeless. Poor grass cover. Pinkish limestone outcrops.

SOIL - General Fine quartz sand on pinkish limestone

Auger Rock at 100 cm Colour 7.5 YR 6/6

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 53%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		D. glabra		
		B. minimifolia		
		B. orbicularis	All species abundant	
		M. angolensis		
		E. cuneata		
		A. edgeworthii		
		Commiphora sp.		
		L. glutinosa		
		J. villosa		
		I. ruspolii		
		Heliotropium sp.		
	"Leb"	Fagonia sp.		
		L. senegalensis		
		Aristida sp.		
		C. aucheri		
	Unidentified	sedge		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/25	23/2/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 25/1

Date: 24.6.79 Observer: Beckett Altitude 257 m.

Site location - Lat. 5°04' Long. 46°03' Map Sheet No. 50

GENERAL DESCRIPTION Undulating area of rocky limestone ridges and shallow sandy hollows. Thin bush, poor herb and grass cover.

SOIL - General Fine/medium particled sand.

Auger - Colour 2.54R 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA High and low varieties

EROSION Nil

DUNES Nil

GRAZING ANIMALS Goats

CROPPING Nil

OTHERS Nil

VEGETATION - Ground Cover 53%

- Components

Collection No.	Local Names	Identification Cont.	Abundance	Use & other Information
		D. glabra	All species abundant	
		A. horrida		
		I. citrina		
		I. donaldsonii		
		A. edgeworthii		
		A. tortilis		
		E. longispina		
		B. minimifolia		
		C. ancistrophora		
		Commiphora sp		
		E. cuneata		
		I. ruspolii		
		P. revoilii		
		Tiliaceous herbs		
		L. senegalenis		
		C. ciliaris		

- Growth stages Grass seeding

Woody vegetation flowering and fruiting.

PHOTOGRAPHS

Serial No.	Reference No.	Contents
J.15/4	25/1/9	View along trace
5	25/1/10	View along trace
6	25/1/11	D. glabra at site

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 25/3

Date: 4/7/79 Observer: Beckett Altitude 187 m.

Site Location - Lat. 4°26' Long. 46°09' Map Sheet No. 65

GENERAL DESCRIPTION Flat, sandy medium thick mixed bush. Medium grass cover. Medium herb cover.

SOIL - General Medium depth; medium particled sand. Some white limestone outcrops.

Auger -

pH -

Colour 2.5 YR 4/8 red

Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 49%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		Boswellia sp		
		A. tortilis		
		S. busseanus	All species abundant	
		E. cuneata		
		J. dichtar		
		I. donaldsonii		
		E. longispina		
		Cassia sp.		
		3 Commiphora spp.		
		A. aff.senegal		
	small tree	A. aff.edgeworthii		
		I. ruspolii		
		T. flavescens		
		Hibiscus sp.		
		Pavonia sp.		
		Melhania sp.		
		Barleria sp.		
		Enteropogon sp.		
		L. senegalensis		
		Aristida sp.		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 18/20	25/3/5	RSP
	21	25/3/6	RSP
	22	25/3/7	RSP

N.B. The site visited was 1.4km NE of the site indicated on the 1:100,000 and 1:250,000 maps, at the junction of the road and a W, S running trace.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 26/1

Date: 24/ 6/79 Observer: Beckett Altitude 253 m

Site Location Lat. 5°15' Long. 46°15 Map Sheet No. 50

GENERAL DESCRIPTION Flat, sandy, thin bush with many species and no dominants. Medium grass cover, poor herb cover.

SOIL - General Deep fine sand, no silt Colour 2.5 YR 4/8 red

Auger -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground Cover 50%

Components

Collection Number	Local Name	Identification	Abundance	Use & Other Information
		A. edgworthii	All species abundant	
		A. tortilis		
		J. dichtar		
		2 Commiphora spp. C. ancistrophora		
		C. flaviflora		
		Z. hamur		
		E. longispinia		
		Grewia tenax		
		T. flavescens		
		A. horrida		
	bush	Cissus sp.		
	small bush "krer-ri"	Solanum sp.		
		A. lanata		
303		Psilotrichum sp.		
304		I. citrina		
		2 Aristida spp. L. senegalensis		
		Stipagrostis hirtigluma		
		C. ciliaris		

Growth stages Grass seeding
Woody vegetation seeding and post-seeding

PHOTOGRAPHS	Serial No.	Reference No.	Contents
	J 15/1	26/1/9	View along trace
	2	26/1/10	View along trace

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 26/2

Date: 25/6/79 Observer: Beckett Altitude 206 m.

Site Location - Lat. 5°03' Long. 46°25' Map Sheet No. 50

GENERAL DESCRIPTION Flat, sandy, thin to medium thick mixed bush, good grass cover, poor herb cover.

SOIL - General Deep fine/medium particled sand. Surface 10cm rather loose.

Auger - Colour 2.5 YR 5/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground Cover 43%

Components:

Collection No.	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii	+	
		A. aff. senegal		
		Commiphora sp.	+	
		S. mirabilis		
		E. cuneata	+	
		K. splendens		
	bush	Cissus sp.		
		L. gluntinosa		
	"Adorh"	S jubae		
		P. revoilii		
		C. cinerascens		
		Hibiscus sp.		
313	"Wes"	Unidentified insectivorous herb		
		Psilotrichum sp.		
		A. sieberana		
		Aristida sp.		
		L.senegalensis		

- Growth stages Wood vegetation flowering and fruiting
Grass seeding

PHOTOGRAPHS	Serial No.	Reference No.	Contents
	J 15/18	26/2/9	RSP
	19	26/2/10	
	20	26/2/11	

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 27/3

Date: 7/4/79 Observer: Beckett Altitude 310 m

Site Location - Lat. 6°20' Long. 46°50' Map Sheet No. 22

GENERAL DESCRIPTION Flat, sandy with limestone ridges. Low Acacia/ Indigofera scrub.

SOIL - General Medium particle quartz sand.

Auger Rock at 0 - 30 cm Colour 2.5 YR 5/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 58%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii	+	
		E. cuneata		
		B. orbicularis		
		C. flaviflora		
		I. donaldsonii		
	Twiggy bush	Solanum sp.		
		J. villosa		
		B. minimifolia		
		I. rotundifolia		
		I. ruspolii	+	
		Indigofera sp.		
		A. sieberana		
		L. senegalensis		
		C. ciliaris		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 11/18	27/3/4	RSP
	19	27/3/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 27/4

Date: 8/4/79 Observer: Beckett Altitude 320 m

Site Location - Lat. 6°20' Long. 46°46' Map Sheet No. 22

GENERAL DESCRIPTION Flat, sandy, medium thick Euphorbia/Caesalpina bush. Medium grass cover.

SOIL - General Medium to coarse quartz sand.

Auger Rock at 80 cm Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION -Ground cover 48%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
94	"Gori"	C. erianthera	+	
		E. cuneata	+	
		B. orbicularis		
		A. edgeworthii		
		C. flaviflora		
		I. rotundifolia		
		L. senegalensis		
		A. sieberana		

- Growth stages Woody vegetation flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 11/20	27/4/5	RSP
	21	27/4/6	Caesalpinia erianthera

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 27/5

Date: 8/4/79 Observer: Beckett Altitude 310 m

Site Location - Lat. 6°05' Long. 46°42' Map Sheet No. 29

GENERAL DESCRIPTION Flat, sandy, open Commiphora/Indigofera shrub land. Commiphora forming dense thickets, medium herb cover.

SOIL - General Medium particled quartz sand

Auger Rock at 80 cm Colour 2.5 YR 4/6 red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	55%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		C. flaviflora	+	
		A. edgeworthii	+	
		Commiphora sp.		
96		G. tenax		
		A. tortilis		
		J. villosa		
		E. longispina		
		Indigofera sp.	+	
		I. ruspolii	+	
98		Adenium sp.		
		A. sieberana		
		L. senegalensis		

- Growth stages Vegetation pre flowering and flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 11/22	27/5/4	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 27/12

Date 14/4/79 Observer: Beckett Altitude 170 m

Site Location - Lat. $5^{o}48'$ Long. $47^{o}43'$ Map Sheet No. 38

GENERAL DESCRIPTION Flat, open, fragmented pinkish limestone. Medium grass cover, poor herb cover.

SOIL - General Shallow fine sand with small limestone fragments.

Auger Rock at 20 cm Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	32%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		E. somalensis		
		E. cuneata		
		C. gladulosa		
	small leaved	Jatropha sp.		
		C. ancistrophora		
		Commiphora sp.		
		A. reficiens		
		A. aff. tortilis		
		L. distichum		
		Blepharis sp.		
		S. ruspolianus	+	
		A. kelleri	+	
	unidentified grass		+	
		D. scindicum		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 28/2

Date: 19/12/78 Observer: Beckett Altitude 300 m

Site Location - Lat. 6°57' Long. 47°34' Map Sheet No. 18

GENERAL DESCRIPTION Flat, gypseous open Acacia/Commiphora bush. Much exposed gypsum and scattered surface rocks. Grass cover very poor.

SOIL - General Shallow fine gypseous sand with thin saline crust. Many rock particles and calcareous concretions.

Auger -

pH 7.3

Colour 7.5 YR 7/4 pink

Other comments -

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	17%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. reficiens		
		A. senegal		
		Commiphora 2 spp.		
		I. rotundifolia		
		S. persica		
		S. incana		
		C. glandulosa		
		Barleria sp.		
		A. leucospira		
		Z. simplex		
		C. aucheri		
		S. ruspolianus		
		D. scindicum		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 1/18 -20	28/2/5 - 7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 28/3

Date: 20/12/78 Observer: Beckett Altitude

Site Location - Lat. 6°59' Long. 47°36' Map Sheet No. 18

GENERAL DESCRIPTION Flat, open, gypseous area with scattered bushes enclosing sink holes up to 2 m deep. Much exposed gypseous anhydrite. Medium grass cover.

SOIL - General Fine gypseous sand with small calcareous nodules.

Auger Rock at 46 cm Colour -

pH - Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 19%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		B. minimifolia		
	Thicket forming	Commiphora sp.		
		A. aff. senegal		
		L. distchum		
		Zygophyllum sp.		
		C. reniformis		
		S. incana		
		C. glandulosa		
		S. ruspolianus		
		C. aucheri		
		D. scindicum		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 2/6 - 7	28/3/5 - 8	RSP
	V 1/25 - 26		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 28/5

Date: 19/12/78 Observer: Beckett Altitude 350 m

Site Location - Lat. $7^{o}10'$ Long. $47^{o}31'$ Map Sheet No. 12

GENERAL DESCRIPTION Flat, gypseous, open bush with patchy grass cover, but overall rather poor. Much exposed gypsum.

SOIL - General Fine sypseous sand with calcareous nodules, surface has thin saline crust.

Auger Rock at 0 - 5 cm Colour 7.5 YR 7/4 Pink

pH 7.2 Other comments -

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	26%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. aff. senegal		
		Commiphora 2 spp.		
		L. distichum		
		Launea sp.		
		S. ruspolianus		
		D. scindicum		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 1/26	28/5/2 -3	RSP
	V 1/ 9		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 28/7

Date: 3/1/79 Observer: Beckett Altitude 320 m

Site Location - Lat. 7°01' Long. 47°28' Map Sheet No. 11

GENERAL DESCRIPTION Flat, gypseous area. Scattered Dobera trees, otherwise low shrubs, and grasses. Medium grass cover, extensive anhydrite outcrops.

SOIL - General Fine gypseous sand, with saline crust on surface and calcareous nodules.

Auger Rock at 33 cm Colour 7.5 YR 7/4 Pink

pH 7.2 Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Not estimated

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		D. glabra	All species abundant	
		A. aff. senegal		
		A. leucospira		
		A. tortilis		
		Commiphora sp.		
		Cadaba sp.		
		E. cuneata		
		Zygophyllum sp.		
		D. scindicum		
		C. aucheri		
86		S. ruspolianus		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 3/11 -12	28/7/5 -6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 28/10

Date: 19/12/78 Observer: Beckett Altitude 360 m

Site Location - Lat. 7°11' Long. 47°32' Map Sheet No. 12

GENERAL DESCRIPTION Flat, gypseous, site very heavily over grazed, poor grass cover, with scattered A. tortilis and Ficus sp.

SOIL - General Fine gypseous sand, with calcareous nodules. Surface has thin saline crust.

Auger -

pH 7.2

Colour 7.5 YR 7/4 Pink

Other comments

SURFACE WATER AND WELLS	Wells within 0.5 km at village
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	22%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. senegal		
		A. tortilis		
		Ficus sp.		
		S. incana		
		C. reniformis		
		Z. simplex		
		Cassia sp.		
		S. spicatus		
		S. ruspolianus		
		D. scindicum		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 1/24 - 25	28/10/5 - 11	RSP
	J 2/ 1 - 5		and large Ficus sp.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 28/11

Date: 20/12/78 Observer: Beckett Altitude 360 m

Site Location - Lat. 7°11' Long. 47°36' Map Sheet No. 11

GENERAL DESCRIPTION Flat, very bare and overgrazed site near village. A gypseous area with much exposed anhydrite. Very poor herb and grass cover. Scattered A. tortilis and Ficus sp.

SOIL - General Fine gypseous sand with calcareous nodules and a little silt.

Auger Rock at 0 - 30 cm Colour -

pH Other comments -

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	30%

- Components

Collection Number	Local Name	Identitication	Abundance	Use and other information
		L. distichum		
		Zygophyllum sp.		
		Xylocalex sp.		
		A. leucospira		
	Fleshy	Compositae		
		S. incana		
		C. reniformis		
		D. scindicum		
		S. ruspolianus		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 1/33 - 34	28/11/5 - 6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 28/19

Date : 19/3/79 Observer: Beckett Altitude 270 m

Site Location Lat. 6°37' Long. 47°18' Map Sheet No. 23

GENERAL DESCRIPTION Gently sloping, gypseous with anyhydrite outcrops and scattered surface rocks. Thin bush, poor grass cover.

SOIL - General Shallow fine gypseous sand.

Auger -

pH -

Colour Pink

Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	48%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		E. cuneata	+	
	Large bush	A. aff. senegal	+	
		S. persica		
		A. edgeworthii		
		Commiphora sp.		
		A. senegal		
		B. minimifolia		
		S. incana		
93	"Ergeg"	Asparagus sp.		
		L. distichum		
		Z. album		
	Unidentified	Compositae		
		S. ruspolianus		
		D. scindicum		
		C. aucheri		

- Growth Stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 28/20

Date: 7/4/79 Observer: Beckett Altitude 260 m

Site Location - Lat. 6°32' Long. 47°16' Map Sheet No. 23

GENERAL DESCRIPTION Rather broken gypseous area with anyhydrite outcrops. Thin bush, poor grass cover

SOIL - General Shallow gypseous sand with many surface rocks.

Auger - Colour 7.5 YR 7/4 pink

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Rain runoff creating small erosion gulleys

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 15%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		E. cuneata	+	
		A. aff. senegal	+	
		Commiphora sp.		
		C. heterotricha		
		Z. album		
		Xylocalex hispida		
	Unidentified	Compositae		
		S. ruspolianus		
		D. scindicum		
		C. aucheri		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 28/21

Date: 7/3/79 Observer: Beckett Altitude 250 m

Site Location - Lat. $6^{o}28'$ Long. $47^{o}17'$ Map Sheet No. 23

GENERAL DESCRIPTION Flat, gypseous with anhydrite outcrops. Medium thick Commiphora/Acacia bush. Generally poor grass cover but becoming good in gypseous depressions.

SOIL - General Shallow fine gypseous sand

Auger Rock at 0 - 20 cm Colour 7.5 YR 7/4 pink

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 12%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii		
		A. senegal	All species abundant	
		A. aff. senegal		
		C. heterotricha		
		C. aff. erhlangerana		
		E. cuneata		
		S. busseanus		
		E. somalensis		
		S. persica		
		Zygophyllum sp.		
		Triumphetta sp.		
		S. incana		
		B. edulis		
		S. ruspolianus		
		D. scindicum		
		A. kelleri		

- Growth Stages All vegetation very dry and pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 28/23

Date: Observer: Beckett Altitude 220 m

Site Location - Lat. 6°07' Long. 47°23' Map Sheet No. 30

GENERAL DESCRIPTION Flat, gypseous, open, very poor grass cover.

SOIL - General Fine powderygpyseous sand with calcareous nodules.

Auger - Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 13%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		E. cuneata	+	
		B. minimifolia		
		Commiphora spp.		
		C. erianthera		
		L. distichum	+	
	unidentifed	Compositae		
		Z. album		
	small leaved	Jatropha sp.		
		S. ruspolianus		
		C. aucheri		

- Growth stages

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 29/1

Date: 2/1/79 Observer: Beckett Altitude 320 m

Site Location - Lat. 7°05' Long. 47°50' Map Sheet No. 11

GENERAL DESCRIPTION Flat, gypseous area with Commiphora sp. forming thickets. Medium grass cover. Much exposed gypseous anhydrite.

SOIL - General Fine gypseous sand with small calcareous nodules.

Auger Rock at 20 cm Colour -

pH - Other comments -

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	41%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
	Thicket forming	Commiphora sp.		
		B. orbicularis		
		E. cuneata		
		A. senegal		
		A. leucospira		
		Zygophyllum sp.		
		C. reniformis		
		S. ruspolianus		
		C. aucheri		
		D. scindicum		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 2/21	29/1/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 29/3

Date: 2/1/79 Observer: Beckett Altitude 320 m

Site Location - Lat. 7°04' Long. 47°54' Map Sheet No. 12

GENERAL DESCRIPTION Flat and gently sloping, gypseous with extensive anhydrite outcrops. Open bush with medium to poor grass cover.

SOIL - General Shallow fine gypseous sand with thin saline crust, and many calcareous nodules.

Auger -

pH -

Colour -

Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 33%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		Commiphora 2 spp.		
		E. cuneata		
		S. incana		
		Cassia sp.		
		D. glabra		
		S. persica		
		A. leucospira		
		A. aff. senegal		
		Euphorbia sp.		
	Unidentified	Compositae		
		D. scindicum		
		S. ruspolianus		
		C. ciliaris		
		C. aucheri		

- Growth stages All vegetation post fruiting

PHTOTOGRAPHS Nil

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 29/4

Date: 2/1/79 Observer: Beckett Altitude 320 m

Site Location - Lat. $7^{o}02'$ Long. $47^{o}50'$ Map Sheet No. 11

GENERAL DESCRIPTION Flat with a very gentle slope, gypsum and limestone outcrops. A low scrub with extensive bare patches and poor grass cover.

SOIL - General Fine dusty sand with calcareous nodules.

Auger Rock at 20 cm Colour -

pH - Other comments -

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	40%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		Commiphora sp.		
		Cassia sp.		
	Unidentified	Succulent shrub		
		P. revoilii		
		Indigofera sp.		
	Unidentified	Compositae		
		S. incana		
		S. ruspolianus		
		D. scindicum		

- Growth Stages All vegetation post fruiting

PHOTOGRAPHS Nil

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 30/2

Date: 1/3/79 Observer: Beckett Altitude 30 m

Site Location - Lat. $6^{o}22'$ Long. $48^{o}42'$ Map Sheet No.26

GENERAL DESCRIPTION Flat, open gypseous plain. Scattered Ficus trees with good herbaceous cover and medium grass cover.

SOIL - General Fine gypseous sand with many calcareous nodules.

Auger Rock at 10 - 20 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	20%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
29	Unidentified	F. vasta S. persica S. incana A. aff.tortilis L. distichum Z. album Salsola sp. Compositae Cycnium sp. U. setulosa D. scindicum s. ruspolianus	All species abundant	

- Growth stages Vegetation fruiting and pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9 / 4	32/5/	F. vasta at site
	5	32/5/6	L. distichum
	6	32/5/7	L. distichum

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 30/3

Date: 28/2/79 Observer: Beckett Altitude 70 m

Site Location - Lat $6^{o}26'$ Long. $48^{o}32'$ Map Sheet No. 26

GENERAL DESCRIPTION Broken gypseous area with erosion gulleys. Many anhydrite outcrops. Patchy Commiphora/Dobera scrub. Poor grass cover.

SOIL - General Deep fine gypseous sand with some quartz.

Auger No rock at 100 cm. Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Small erosion gulleys and much run-off

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 28%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		D. glabra		
27	"Hadi"	C. flabellulifera	+	
		I. ruspolii		
		Commiphora sp.		
		C. aucheri		
		D. scindicum	+	
		S. ruspolianus		

- Growth stages Woody vegetation flowering
Grass pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9/ 1	30/3/5	RSP
	2	30/3/6	RSP
	3	30/3/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 30/4

Date: 28/2/79 Observer: Beckett Altitude 30 m

Site Location - Lat. $6^{o}28'$ Long. $46^{o}46'$ Map Sheet No. 26

GENERAL DESCRIPTION Flat gypseous plain. Scattered *Ficus* trees and *Acacia* bushes. Poor grass cover.

SOIL - General Shallow gypseous sand with some anhydrite outcrops.

Auger 0 - 15 cm Colour 7.5 YR 7/4 Pink

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 33%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		F. vasta		
		A. aff.tortilis	All species abundant	
58		L. distichum		
59	"Darran da Warho"	Z. album		
	Unidentified	Compositae		
		S. micromeris		
		S. ruspolianus		
		D. scindicum		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 30/4

Date: 28/2/79 Observer: Beckett Altitude 30 m

Site Location - Lat. 6°28' Long. 48°46' Map Sheet No. 26

GENERAL DESCRIPTION Flat gypseous plain. Scattered Ficus trees and Acacia bushes. Poor grass cover.

SOIL - General Shallow gypseous sand with some anhydrite outcrops.

Auger 0 - 15 cm Colour 7.5 YR 7/4 Pink

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 33%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		F. vasta		
		A. aff.tortilis	All species abundant	
58		L. distichum		
59	"Darran da Warho"	Z. album		
	Unidentified	Compositae		
		S. micromeris		
		S. ruspolianus		
		D. scindicum		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTION SITE NO. 30/5

Date: 1/3/79 Observer: Beckett Altitude 40 m

Site Location - Lat. Long: Map Sheet No. 33

GENERAL DESCRIPTION Flat, open, and gypseous. Scattered Dobera and other low bushes. Medium grass cover.

SOIL - General Very fine gypseous sand with coarse quartz mantle, some anhydrite outcrops.

Auger Rock at 40 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	27%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		D. glabra	+	
		E. cuneata	+	
		Sterculia sp.		
		Commiphora sp.		
	Unidentified	Compositae		
		I. ruspolii		
30	"Gulan"	S. pycnophylla		
		S. ruspolianus		
		D. scindicum		
		Aristida sp.		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9 / 7	30/5/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 31/1

Date: 8/4/79 Observer: Beckett Altitude 290 m

Site Location - Lat. 6°10' Long. 46°50' Map Sheet No. 29

GENERAL DESCRIPTION Flat, gypseous anhydrite outcrops. Medium thick Commiphora bush, very poor herb and grass cover.

SOIL - General Shallow fine gypseous sand

Auger -

pH -

Colour 7.5 YR 6/6

Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	45%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
	"Hadi	C. flabellulifera	+	
		S. persica		
		S. incana		
		A. tortilis		
		B. orbicularis		
95		Sarcostemma sp.		

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 11/23	31/1/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 31/5

Date: 18/4/79 Observer: Beckett Altitude 280 m

Site Location - Lat. 5°54' Long. 46°36' Map Sheet No. 36

GENERAL DESCRIPTION Flat, gypseous, some anhydrite outcrops. Thin Commiphora/Euphorbia - patchy grass cover - heavily grazed.

SOIL - General Shallow gypseous sand

Auger Rock at 20 cm Colour

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	36%
- Components:	

Collection Number	Local Name	Identification	Abundance	Use and other Information
	"Enchurr"	E. somalensis	+	
	"Hadi"	C. flabellifera	+	
122		C. heterotricha		
120		Commiphora sp.		
121	"Duncal"	C. aff. erhlangerana		
		S. incana		
	small shrub	Euphorbia sp.		
		E. cuneata	+	
		Sprobolus sp.	+	
		C. aucheri		

- Growth stages Woody vegetation pre-flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01. SAMPLING SITE DESCRIPTIONS SITE NO. 31/6

Date: Observer: Beckett Altitude 250 m.

Site Location - Lat. 5°34' Long. 46°23' Map Sheet No.43

GENERAL DESCRIPTION Flat, gypseous sand, some anhydrite outcrops. Scattered bushes, poor grass and herb cover.

SOIL - General Very fine sand.

Auger Rock at 20 cm Colour 7.5 YR 5/6 strong brown

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	35%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
141		A. trisulcus		
		B. minimifolia		
	"Afgub"	Commiphora sp.		
		A. reficiens		
		B. fructicosum		
		C. heterotricha		
		S. incana		
		Zygophyllum sp.		
	unidentified	Compositae		
		D. scindicum		
		C. aucheri		
		S. ruspolianus		
140 a		Hyoscyamus sp.		

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 31/7

Date: 20/4/79 Observer: Beckett Altitude 250 m

Site Location - Lat. 5°28' Long. 48°22' Map Sheet No. 42

GENERAL DESCRIPTION Flat grassland, surface strewn with small limestone fragments.

SOIL - General Shallow sand over limestone. Many small limestone fragments in sand.

Auger Rock at 10 cm Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 37%

- Components:

Collection Number	Local Names	Identification	Abundance	Use and other Information
	"fulai"	Acacia sp.		
		C. glandulosa		
		G. tenax		
		Cassia sp.		
		A. kelleri		
		S. ioclados	+	
		D. scindicum		
		S. ruspolianus		

- Growth stages

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 32/1

Date 25/6/79 Observer: Beckett Altitude 180 m.

Site Location - lat. $4^{o}58'$ Long. $46^{o}27'$ Map Sheet No. 58

GENERAL DESCRIPTION Flat gypseous plain, sample in slight depression near wells. Very good grass cover.
Area surrounded by Acacia/Commiphora bush with poor grass cover.

SOIL - General Deep sandy silt

Auger -

pH -

Colour -

Other comments

SURFACE WATER AND WELLS

TERMITARIA Massive variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground Cover 25%

- Components:

Collection No.	Local Name	Identification	Abundance	Use and other information
		A. horrida	+	
		A. trisulcus	+	
		D. glabra		
		Z. hamur		
		Cassia sp.		
		C. glandulosa		
		2 Commiphora spp.		
310	small leaved	Indigofera sp.		
		I. donaldsonii		
		A. lanat		
		I. ruspolii		
311		Tripogon sp.		
312		Sporobolus sp.		
		A. kelleri		
		D. scindicum		

- Growth stages

PHOTOGRAPHS	Serial No.	Reference No.	Contents
	J 15/16	32/1/4	R.S.P.
	17	32/1/5	R.S.P

N.B. The site visited was 1km km E of the location on the map, in the vicinity of Maalin Nugur wells

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 32/2

Date: 25/6/79 Observer: Beckett Altitude 156 m.

Site Location - Lat. 4°44' Long. 46°32' Map. Sheet No. 59

GENERAL DESCRIPTION Very flat, surface strewn with very small limestone chips and small stones. Chiefly low bushes and shrubs. Medium grass cover, poor herb cover.

SOIL - General Fine sand with small fragments of limestone, some silt.

Auger -

pH -

Colour 7.5 YR 5/6 brown

Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS camels

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 36%

- Components:

Collection No.	Local Name	Identification	Abundance	Use and other Information
		A. edgworthii		
		S. pycnophylla		
		E. cuneata		
		A. tortilis		
		S. persica		
		C. erianthera		
		2 Commiphora spp.		
		C. glandulosa		
		D. glabra		
		A. triaculcus		
		L. senegalensis		
		A. kelleri		
		D. scindicum		
		Sporobolus sp.		
		unidentified herb		
		Convolvulaceae		

- Growth stages All vegetation post seeding.

PHOTOGRAPHS	Serial No.	Reference No.	Contents
	J 15/13	32/2/5	Around trace axis
	14	32/2/6	"
	15	32/2/6	"

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 32/3

Date: 30/6/79 Observer: Beckett Altitude 150 m

Site Location - Lat. 4°44' N. Long. 46°41' Map Sheet No. 59

GENERAL DESCRIPTION Flat gypseous area, some gypseous anhydrite outcrops. Thin Caesalpinia bush, medium grass cover, poor herb cover.

SOIL - General Shallow fine gypseous sand.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 47%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		C. erianthera	+	
		D. glabra		
		A. horrida		
		C. flabellulifera		
		C. flaviflora		
		A. mellifera		
		A. edgeworthii		
		C. ancistrophora		
		Senra incana		
		I. ruspolii		
		A. lanata		
		D. scindicum		
		S. ruspolianus		
		Sporobolus sp.		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 17/31	32/3/5	RSP
	32	32/2/6	RSP
	33	32/3/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 32/4

Date: 26/6/79 Observer: Beckett Altitude 140 m.

Site Location - Lat. 4°54' Long. 47°06' Map Sheet No. 60

GENERAL DESCRIPTION Depression between limestone escarpments. Gypseous sand with broken surface.
Thick bush, medium grass cover, poor herb cover.

SOIL - General Shallow silty sand of very fine particles

Auger - Colour 7.5 YR 6/6 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground Cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		C. erianthera	+	
		C flabellulifera	+	
		E. cuneata		
		Asparagus sp.		
		D. glabra		
		3 Commiphora spp.		
		C. glandulosa		
		A. reficiens		
	white flowers	Barleria sp.		
		S. ruspolianus		
		L. senegalensis		
319		Sporobolus ioclados		
		Tetrachaete sp.		

- Growth stages Woody vegetation post fruiting grass seeding.

PHOTOGRAPHS

Serial Number	Reference Number	Contents
J 15/36	32/4/9	RSP
J 16/ 0	32/4/10	RSP
1	32/4/11	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 34/1

Date: 5/3/79 Observer: Beckett Altitude

Site Location - Lat. 6°59' Long. 47°49' Map Sheet No. 18

GENERAL DESCRIPTION Flat, gypseous, thick Euphorbia/Commiphora bush. Poor grass cover. Extensive bare patches and anhydrite outcrops. associated with water run off in to small drainage channel.

SOIL - General Very shallow gypseous sand.

Auger - Colour -

pH - Other Comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 20%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		E. cuneata	+	
		E. somalensis	+	
		A. leucospira		
	very low bush "Adad"	Acacia sp.		
		S. incana		
		I. ruspolii		
		Z. album		
		Unidentified Compositae		
		Aristida sp.		
		C. aucheri		
		S. ruspolianus		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference	Contents
	J 10 / 1	34/1/5	RSP
	2	34/1/6	Anhydrite outcrops in middle ground

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 34/2

Date: 5/3/79 Observer: Beckett Altitude 250 m

Site Location - Lat. 6°53' Long. 47°49' Map sheet No. 18

GENERAL DESCRIPTION Flat gypseous valley. Thin Euphorbia/Commiphora bush. Occasional anhydrite outcrops.

SOIL - General Fine powdery gypseous sand with coarse quartz mantle

Auger Rock at 40 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	32%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
35		Commiphora sp.	+	
36		Commiphora sp.	+	
37		Commiphora sp.	+	
		E. cuneata		
		C. erianthera		
		A. leucospira		
		B. orbicularis		
		E. somalensis	+	
		J. dichtar		
		I. ruspolii		
		C. aucheri		
		Aristida sp.		
		S. ruspolianus		
		S. ioclados		

- Growth stages Woody vegetation flowering and fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9/36_35	34/4/5-6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTION SITE NO. 34/4

Date: 5/3/79 Observer: Beckett Altitude 240 m

Site Location - Lat. $6^{o}48'$ Long. $47^{o}54'$ Map Sheet No. 18

GENERAL DESCRIPTION Shallow gypseous valley between two low ridges. Thin Euphorbia/Commiphora bush.

SOIL - General Shallow fine quartz sand with many rock fragments.

Auger Rock at 15 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	38%

- Components:

Collection Number	Local Names	Identification	Abundance	Use and other Information
		A. leucospira		
		E. longispine	+	
		B. orbicularis		
		J. villosa		
		C. flaviflora	+	
		2 Commiphora spp.	+	
		J. dichtar		
		S. persica		
		I. ruspoli i		
		B. edulis		
		Barleria sp.		
		A. kelleri		
		L. senegalensis		
		S. ruspolianus		
		C. aucheri		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9/34	34/4/5	RSP
	35	34/4/6	Euphorbia & Commiphora spp.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 34/6

Date: 17/3/79 Observer: Beckett Altitude 180 m

Site Location - Lat. $6^{o}49'$ Long. $48^{o}12'$ Map Sheet No. 19

GENERAL DESCRIPTION Flat open, sandy valley between two low ridges. Almost treeless. Medium grass cover.

SOIL - General Deep fine particled sand

Auger No rock at 140 cm Colour 5 YR 5/6 yellowish red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Occasional low variety
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	62%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. orbicularis		
		Commiphora sp.		
		A. edgeworthii		
		J. dichtar		
		I. rotundifolia		
		C. cinerascens		
		I. ruspolii		
		Indigofera sp.		
		L. senegalensis		
		A. sieberana		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/18	34/6/5	RSP
	19	34/6/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 34/7

Date: 25/2/79 Observer: Beckett Altitude 270 m

Site Location - Lat. $6^{o}41'$ Long. $47^{o}31'$ Map Sheet No. 18

GENERAL DESCRIPTION Flat, open, gypseous and treeless. Low shrubs and herbs poor grass cover, much exposed sand and gypseous ~~anhydrite~~.

SOIL - General Fine to medium particled sand with thin quartz mantle.

Auger Rock at 15 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Heavily grazed

VEGETATION - Ground cover 14%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. leucospira		
		Z. album		
		L. distichum		
		C. flabellulifera		
		Barleria sp.		
		S. ruspolianus		
		C. aucheri		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS Nil

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 34/8

Date: 2/3/79 Observer: Beckett Altitude 220 m

Site Location - Lat. 6°35' Long. 47°38' Map Sheet No. 24

GENERAL DESCRIPTION Flat, gypseous. Commiphora/Euphorbia scrub. Some anhydrite outcrops. Poor grass and herb cover.

SOIL - General Shallow sand over gypsum.

Auger - Colour -

pH - Other Comments

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 20%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. orbicularis		
		E. longispina	+	
33	Very low bush "Adad"	A. paradoxa		
		E. somalensis	+	
		C. flabellulifera	+	
		Commiphora sp.	+	
		E. cuneata		
32	"Gori"	E. erianthera		
		S. incana		
	Unidentified	Compositae		
		S. ruspolianus		
		D. scindicum		
		Aristida sp.		

- Growth stages All vegetation pre flowering and very dry.

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9/26	34/8/5	RSP
	27	34/8/6	RSP with gypseous anhydrite outcrops.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 34/9

Date 25/2/79 Observer: Beckett Altitude 220 m

Site Location - Lat. 6°30' Long. 47°44' Map Sheet No. 24

GENERAL DESCRIPTION Flat, open, scattered Balanites, chiefly A. edgeworthii and low shrubs. Grass cover and herb cover very poor. Much exposed sand. Gently sloping to south.

SOIL - General Fine to medium particled sand with small calcareous nodules, on and below the surface.

Auger Rock at 53 cm. Colour Pale orange

pH - Other comments No moisture, rocks to 40 cm.

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 30%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. edgeworthii	+	
		E. longispina		
		I. ruspolii		
		E. somalensis		
	"Hedik"	B. edulis		
		Commiphora sp.		
		A. kelleri		
		A. sieberana		
		L. senegalensis		
		D. scindicum		

- Growth stages Grass pre flowering

Woody vegetation flowering and pre flowering

PHOTOGRAPHS Serial Number Reference Number Contents

Nil

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO.34/14

Date: 25/2/79 Observer: Beckett Altitude 170 m

Site Location - Lat. 6°22' Long. 47°56' Map Sheet No. 24

GENERAL DESCRIPTION Winding water coarse between two low ridges. Undulating and sandy. A few small Tamarix trees. Very poor grass/herb cover. Much exposed sand.

SOIL - General Deep, medium to fine particled alluvial sand, loosely consolidated.

Auger No rock at 120 cm. Colour 5 YR 6/6 reddish yellow

pH 7.3 Other comments No moisture, poor root development.

SURFACE WATER AND WELLS Permanent wells 0.5 km to North

TERMITARIA Nil

EROSION Nil

DUNES Small banks of wind blown sand

GRAZING ANIMALS Sheep

CROPPING Date trees planted!

OTHERS Sand easily moved by wind.

VEGETATION - Ground cover 10%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
9a	"Durr"	T. aphylla		
9b		Tamarix sp.		
	"Cahn sole"	Cassia sp.		
		A. horrida		
		A. edgeworthii		
10	"Dihi"	unidentified grass		
		C. ciliaris		
10 a		Eragrostis sp.		

- Growth stages Grass flowering

PHOTOGRAPHS	Serial Number	Reference	Contents
	J 7/23 - 26	34/14/5-8	Large Tamarix tree

APPENDIX 1401 SAMPLING SITE DESCRIPTIONS SITE NO. 34/15

Date: 1/3/79 Observer: Beckett Altitude 140 m

Site Location - Lat. 6°20' Long. 48°06' Map Sheet No. 25

GENERAL DESCRIPTION Flat, open, sandy. Thin Acacia bush

SOIL - General Deep fine quartz sand.

Auger No rock at 140 cm. Colour 5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	44%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. horrida	+	
		B. orbicularis		
		A. edgeworthii		
		L. glutinosa		
		I. ruspolii		
		D. scindicum		
		L. senegalensis		
		A. sieberana		
		Aristida sp.		

- Growth Stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9/ 17	34/15/5	A. horrida bushes in back ground
	18	34/15/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 34/16

Date: 26/2/79 Observer: Beckett Altitude 170 m

Site Location - Lat. 6°33' Long. 48°17' Map Sheet No. 25

GENERAL DESCRIPTION Gently undulating, sandy, open. Chiefly low shrubs, with scattered Balanites

SOIL - General Fine sand with quartz mantle

Auger Rock at 90 cm Colour 5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 41%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii	+	
		B. orbicularis	+	
		J. dichtar		
13		Commiphora sp.		
		Indigofera sp.		
		Olenandia sp.		
		Heliotropium sp.		
11		Sedge		
		A. sieberana		
		Enteropogon sp.		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 7/ 36	34/16/5	RSP
	37	34/16/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 34/17

Date: 1/3/79 Observer: Beckett Altitude 70 m

Site Location - Lat. 6°15' Long. 48°26' Map Sheet No. 32

GENERAL DESCRIPTION Undulating rather broken gypseous area. Scattered Dobera trees, otherwise low bushes and shrubs. Much exposed sand and gypseous anhydrite.

SOIL - General Very shallow fine gypseous sand.

Auger Rock at 20 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS Xingod wells within 1 km.

TERMITARIA Occasional

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Heavily grazed and trampled

VEGETATION - Ground cover 5%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		D. glabra	+	
		Commiphora sp.		
		S. pycnophylla	+	
		Aloe sp.		
		Barleria sp.		
	2 unidentified spp.	Compositae		
		Z. album		
		D. scindicum		
		S. ruspolianus		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9 /13	34/17/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 34/18

Date: 1/3/79 Observer: Beckett Altitude 100 m

Site Location - Lat. 6°14' Long. 48°18' Map Sheet No. 32

GENERAL DESCRIPTION Flat, open and gypseous. Treeless with very poor grass and herb cover. Anhydrite outcrops.

SOIL - General Very shallow gypseous sand.

Auger -

pH -

Colour -

Other comments

SURFACE WATER AND WELLS Sample includes well

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels

CROPPING Nil

OTHERS Area heavily grazed and trampled.

VEGETATION - Ground cover 19%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. orbicularis		
		Barleria sp.		
		D. scindicum		
		S. ruspolianus		
		Aristida sp.		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS

Serial Number	Reference Number	Contents
No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 34/19

Date: 1/3/79 Observer: Beckett Altitude 110 m.

Site Location - Lat. 6°17' Long. 48°13' Map Sheet No. 32

GENERAL DESCRIPTION Open, gently sloping and gypseous. Scattered Boscia trees some anhydrite outcrops.

SOIL - General Shallow fine gypseous sand with calcareous stones.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	27%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minimifolia		
		Commiphora sp.		
	very low bush "Adad"	A. paradoxa		
	Unidentified	Compositae		
		I. ruspolii		
		C. aucheri		
		D. scindicum		
		Aristida sp.		
		S. ruspolianus		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9/16	34/19/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 36/3

Date: 7/3/79 Observer: Beckett Altitude 270 m

Site Location - Lat. $6^{o}31'$ Long. $47^{o}22'$ Map Sheet No. 23

GENERAL DESCRIPTION Flat, very rocky limestone area. Medium thick bush poor grass cover.

SOIL - General Very shallow fine sand

Auger 0 - 5 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	42%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minimifolia	All species abundant	
		B. orbicularis		
		A. horrida		
		Commiphora sp.		
		A. edgeworthii		
		A. mellifera		
		S. persica		
	"Chellel"	Cassia sp.		
		A. senegal		
		Boswellia sp.		
		I. ruspolii		
		C. cinerascens		
		Indigofera sp.		

- Growth stages All vegetation pre flowering and very dry

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/ 9	36/3/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 36/7

Date: 7/3/79 Observer: Beckett Altitude 260 m

Site Location - Lat. 6°28' Long. 47°12' Map Sheet No. 23

GENERAL DESCRIPTION Rocky limestone ridges and sandy depressions. Balanities/ Indigofera scrub, very poor grass cover.

SOIL - General Shallow fine medium particled quartz sand.

Auger Rock at 0 - 20 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	39%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. orbicularis	+	
		A. edgeworthii		
33	very low bush	Acacia sp.		
		E. cuneata		
		J. villosa		
		S. busseanus		
		C. flaviflora		
		J. dichtar		
		I. rotundifolia		
		I. ruspolii	+	
		Crotolaria sp.		
		Indigofera sp.		
		Aristida sp.		
38	"Yeris"			

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/6-7	36/7/5-6	R.S.P.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 36/9

Date: 10/3/79 Observer: Beckett Altitude 330 m

Site Location - Lat. 6°31' Long. 46°57' Map Sheet No. 22

GENERAL DESCRIPTION Flat, rocky limestone area. Thin to medium thick Commiphora bush. Very poor grass cover.

SOIL - General Very shallow silty sand.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 38%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. aff. senegal		
		A. senegal		
		B. minimifolia		
		B. orbicularis		
		E. cuneata		
		2 Commiphora spp.		
		L. greenwayii		
		Boswellia sp.		
		C. glandulosa		
		Cadaba sp.		
		C. aucheri		
		Aristida sp.		
		E. cenchroides		

- Growth stages Vegetation pre flowering and fruiting
All vegetation very dry

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 36/11

Date: 7/4/79 Observer: Beckett Altitude 280 m

Site Location - Lat. 6°25' Long. 47°10' Map Sheet No. 23

GENERAL DESCRIPTION Flat, rocky, limestone area. Medium thick Acacia/ Commiphora bush. Poor grass cover.

SOIL - General Shallow fine sand over limestone

Auger - Colour 5 YR 5/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	43%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. senegal	All species abundant.	
		E. cuneata		
		B.minimifolia		
		B. orbicularis		
		J. villosa		
		2 Commiphora spp.		
		A. horrida		
		S. persica		
		C. glandulosa		
		I. donaldsonii		
		G. tenax		
		G. penicilliata		
		Triumphetta sp.		
		Asparagus sp.		
		A. kelleri		

- Growth stages Vegetation pre flowering and flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 11/14	36/11/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 36/12

Date: 9/4/79 Observer: Beckett Altitude 220 m

Site Location - Lat. 6°06' " Long. 47°22' Map Sheet No. 30

GENERAL DESCRIPTION Flat, stoney, medium thick Acacia/Commiphora bush. Very poor herb and grass cover.

SOIL - General Shallow fine powdery sand with many limestone fragments

Auger Rock at 20 cm Colour 7.5 YR 5/6 strong brown

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	26%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minimifolia		
		E. cuneata		
		S. persica		
		E. longispina		
		A. horrida	+	
		A. senegal	+	
		A. aff.senegal	+	
		C. glandulosa		
		3 Commiphora spp.	+	
		A. aff.tortilis	+	
		Barleria sp.		
		A. kelleri		
		Aristida sp.		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 11/29	36/12/3	RSP
	30	36/12/4	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 37/4

Date: 7/4/79 Observer: Beckett Altitude 310 m

Site Location - Lat. 6°29' Long. 47°03' Map Sheet No. 23

GENERAL DESCRIPTION Flat, gyseous/limestone plain. Open Chysopogon grassland with scattered Boscia trees. Some anyhyrite outcrops.

SOIL - General Fine sand with calca eous particles.

Auger Rock at 10 - 50 cm Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	44%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minimifolia		
		C. glandulosa		
		Commiphora sp.		
		C. aucheri	+	
		D. scindicum		
		S. ruspolianus		
221		Sporobolus sp.		
220	Unidentified grass			

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 11/16	37/4/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 37/5

Date: 10/3/79 Observer: Beckett Altitude 330 m

Site Location - Lat. 6°38' Long. 47°05' Map Sheet No. 23

GENERAL DESCRIPTION Flat, open, gypseous. Chrysopogon grassland with scattered Boscia and Cadaba trees, Medium grass cover.

SOIL - General Shallow, fine gypseous sand, over gypsum, some anhydrite outcrops.

Auger Rock at 0 - 30 cm. Colour 5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	43%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minimifolia	+	
		C. heterotricha	+	
		C. glandulosa		
		Commiphora sp.		
	Unidentified	Capparidaceous bush		
		P. revoilii		
		B. edulis		
		D. scindicum		
		S. ruspolianus		
		C. aucheri	+	

- Growth stages All vegetation very dry and pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/12	37/5/5	RSP
	13	37/5/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 37/7

Date: 7/3/79 Observer: Beckett Altitude 240 m

Site Location Lat. $6^{o}28'$ Long. $47^{o}27'$ Map Sheet No. 23

GENERAL DESCRIPTION Flat, sandy, open. Low bushes and shrubs. Euphorbia/ Indigofera scrub. Medium grass cover. Occasional pinkish limestone outcrops.

SOIL - General Fine sand over pinkish limestone .

Auger Rock at 0 - 40 cm Colour 5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 36%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		E. longispina	+	
		S. persica		
		E. cuneata		
		J. dichtar		
		I. rotundifolia		
	"Labaalyole"	Cissus sp.		
		Indigofera sp.	+	
		M.edulis		
		A. sieberana		
		C. ciliaris		

- Growth Stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 10/ 6	37/7/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 37/10

Date: 14/4/79 Observer: Beckett Altitude 150 m

Site Location - Lat. 5° 47' Long. 47°26' Map Sheet No. 37

GENERAL DESCRIPTION Gently sloping gypseous area, receiving run off from surrounding areas. Small drainage channel.

SOIL - General Fine gypseous sand with calcareous nodules also areas of coarse alluvial sand.

Auger Rock at 50 cm. Colour 7.5 YR 7/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIAMLS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	15%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. reficiens	All species abundant	
		E. somalensis		
		Grewia sp.		
		Dalbergia sp.		
		S. persica		
		C. heterotricha		
	small leaved	Jatropha sp,		
		Zygophyllum sp.		
		Xylocalex hispida		
117		Sesmothamnus rivae		
		C. reniformis		
		S. ruspolianus		

- Growth stages Vegetation flowering and fruiting

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 37/14

Date: 13/4/79 Observer: Beckett Altitude 190 m

Site Location - Lat. 5°58' Long. 47°30' Map Sheet No. 38

GENERAL DESCRIPTION Flat, open, calcareous sand. Low bushes and shrubs; poor grass cover.

SOIL - General Fine sand with calcareous fragments, some gypseous anhydrite outcrops.

Auger Rock at 35 cm Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	28%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		L. distichum	+	
		Z. album		
		Xylocalex hispida		
		E. cuneata		
	small leaved	Japtropha sp.		
		Commiphora sp.		
		S. ruspolianus	+	
		C. aucheri		
		A. kelleri		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 37/16

Date: 13/4/79 Observer: Beckett Altitude 160 m

Site Location - Lat. 6°01' Long. 47°48' Map Sheet No. 31

GENERAL DESCRIPTION Flat, slightly gypseous area. Thin Commiphora/ Euphorbia bush. Medium to poor herb and grass cover.

SOIL - General Shallow fine sand with calcareous fragments.

Auger -

pH -

Colour 7.5 YR 6/6 reddish yellow

Other Comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	29%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
	"Hadi"	C. flabellulifera	+	
		E. somalensis	+	
109	"Afgub"	Commiphora sp.		
		C. heterotricha		
110	small leaved	Jatropha sp.		
		E. cuneata		
		B. minimifolia		
		Z. album		
109 a		Cleome sp.		
		S. ruspolianus		
		A. kelleri		
		C. aucheri		

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 38/1

Date: 25/2/79 Observer: Beckett Altitude 180 m

Site Location - Lat. $6^{o}25'$ Long. $47^{o}58'$ Map Sheet No. 24

GENERAL DESCRIPTION Flat, open and sandy. Chiefly low bushes with occasional scattered Balanites. Medium grass cover with much exposed sand.

SOIL - General Fine to coarse particled quartz sand. No horizons.

Auger Rock at 85 cm Colour 2.5 YR 5/8 red

pH 7.2 Other comments -

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 46%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. edgeworthii		
	Very low bush "Adad"	A. paradoxa		
7	Nagar			
		P. revoilii		
		B. edulis		
		Aristida sp.		
		A. sieberana		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 7/20	38/1/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 38/2

Date: 25/2/79 Observer: Beckett Altitude 170 m

Site Location - Lat. 6°20' Long. 47°55' Map Sheet No. 24

GENERAL DESCRIPTION Flat, open and sandy. Scattered Balanites. Chiefly low bushes. Medium/poor grass cover. Much exposed sand.

SOIL - General Deep fine to coarse particled sand, no horizons.

Auger No rock at 110 cm Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	24%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other information
		A. edgeworthii		
		J. dichtar		
		Indigofera sp.		
		B. edulis	All species abundant	
		I. ruspolii		
8	"Sarin"	small herb		
		Aristida sp.		
		L. senegalensis		
		C. ciliaris		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 7/21 - 22	38/2/5-6	Acacia edgeworthii bushes in foreground

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 38/5

Date: 26/2/79 Observer: Beckett Altitude 180 m

Site Location - Lat. 6°33' Long. 48°08' Map Sheet No. 25

GENERAL DESCRIPTION Flat to gently undulating. A. reficiens/Balanites scrub. Medium to poor grass cover.

SOIL - General Fine to coarse quartz sand becoming redder with depth.

Auger Rock at 60 cm. Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Oryx and gazelle

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 54%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. orbicularis	+	
		A. reficiens	+	
		E. cuneata		
		A. edgeworthii		
13		Commiphora sp.		
13 a		Commiphora sp.		
		A. horrida		
		Indigofera sp.		
		Crotolaria sp.		
		I. rotundifolia		
		L. senegalensis		
		A. sieberana		
		Enteropogon sp.		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 7/34	38/5/5	RSP
	35	38/5/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 38/6

Date: 2/3/79 Observer: Beckett Altitude 160 m

Site Location - Lat. $6^{o}22'$ Long. $48^{o}02'$ Map Sheet No. 25

GENERAL DESCRIPTION Flat sandy, thin Acacia/Balanites bush.

SOIL - General Deep medium particled quartz sand.

Auger No rock at 140 cm. Colour 2.5 YR 5/8 red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	29%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii	+	
		A. horrida	+	
		B. minimifolia		
		J. dichtar		
		L. glutinosa		
	very low bush "Adad"	A. paradoxa		
		I. rotundifolia		
	"Guweh"	Commiphora sp.		
		Liliaceous herbs		
		A. sieberana		
		L. senegalensis		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9/22	38/6/5	RSP
	23	38/6/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 40/1

Date: 26/2/79 Observer: Beckett Altitude 160 m

Site Location - Lat. 6°32' Long. 48°24' Map Sheet No. 25

GENERAL DESCRIPTION Flat, open, chiefly low bushes and shrubs with scattered Balanites trees, medium to poor grass cover.

SOIL - General Fine sand with coarse quartz mantle

Auger Rock at 85 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	low variety
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	36%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii	+	
13		Commiphora sp.		
	"Cahn sole"	Cassia sp.		
		J. villosa	+	
15	"Degelolu"	Melhania sp.		
		Indigofera sp	+	
		I. ruspolii		
		Crotolaria sp.		
		A. sieberana		
		L. senegalensis		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 8/ 1	40/1/5	RSP
	8/ 2	40/1/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 41/1

Date: 27/2/79 Observer: Beckett Altitude 60 m

Site Location - Lat. 6°35' Long. 48°56' Map Sheet No. 26

GENERAL DESCRIPTION Flat very open, sandy, very occasional Bosŏia otherwise E very low shrubs and bushes. Medium grass cover.

SOIL - General Deep fine quartz sand, well consolidated.

Auger Rock not reached at 120 cm Colour - Reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Soemerings Gazelle

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 46%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minimifolia		
	Small tussocky	Euphorbia sp.	+	
19		Commiphora sp.		
18		Hibiscus aponeurus		
	very low shrub	E. aff. cuneata		
		I. ruspolii		
		C. cinerascens		
		B. edulis		
		A. sieberana	+	
		D. scindicum	+	
		L. senegalensis		
		Aristida sp.	+	
		C. aucheri		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 8/13	41/1/5	RSP
	14	41/1/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 42/2

Date: 26/2/79 Observer: Beckett Altitude 60m

Site Location - Lat. $6^{o}33'$ Long. $48^{o}42'$ Map Sheet No. 26

GENERAL DESCRIPTION Flat, sandy area between two low limestone scarps. Chiefly low bushes. Medium grass cover.

SOIL - General Deep fine to coarse particled quartz sand.

Auger -

pH -

Colour 5 YR 6/6 reddish yellow

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	31%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		D. glabra		
		B. minimifolia	All species abundant	
		J. villosa		
		A. edgeworthii		
		E. cuneata		
		A. horrida		
		Commiphora sp.		
		C. glandulosa		
		B. edulis		
		I. ruspolii		
		I. rotundifolia		
		C. cinerascens		
		A. sieberana		
		L. senegalensis		
		D. scindicum		
		Enteropogon sp.		
		Aristida sp.		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 8/ 3	42/2/5	RSP
	4	42/2/6	Scattered D. glabra bushes
	5	42/2/7	A. horrida bushes in back ground

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 42/3

Date: 28/2/79 Observer: Beckett Altitude 40 m

Site Location - Lat. $6^{o}27'$ Long. $48^{o}39'$ Map Sheet No. 26

GENERAL DESCRIPTION Flat to very gently undulating. Limestone and gypsum boundary. Open with low shrubs and scattered Dobera trees.

SOIL - General Deep fine sand with coarse quartz mantle. Some anhydrite outcrops.

Auger -

pH -

Colour -

Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground Cover 39%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. horrida		
		D. glabra		
		E. cuneata		
		A. nubica		
		A. edgeworthii		
		C. flaviflora		
		Commiphora sp.		
		I. ruspolii		
		J. villosa		
		I. rotundifolia		
		Aristida sp.		
		L. senegalensis		
		D. scindicum		
		C. aucheri		
28	"Afrug"	Grass		
		Enteropogon sp.		

- Growth Stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 8/36	42/3/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 42/4

Date: 27/2/79 Observer: Beckett Altitude 60 m

Site Location - Lat. 6°38' Long. 48°50' Map Sheet No. 26

GENERAL DESCRIPTION Broken and hilly limestone area. Rocky gulleys and sandy depressions. Scattered Boscia but chiefly low bushes and shrubs. Very poor grass cover.

SOIL - General Very shallow sand over pinkish limestone.

Auger Rock at 0 - 5 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels, Dibatag

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 28%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minimifolia		
		A. leucospira		
		A. edgeworthii	All species abundant	
		E. cuneata		
	Very low bush	Acacia sp.		
23	"Isteer"	Iphonia sp.		
	"Bur Bur"	Rubiaceae		
72		Cassia sp.		
		Barleria sp.		
		C. aucheri		
		A. kelleri		
		L. senegalensis		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J8 9	42/4/5	RSP
	10	42/4/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 42/8

Date: 1/3/79 Observer: Beckett Altitude 80 m

Site Location - Lat. 6°16' Long. 48°32' Map Sheet No. 33

GENERAL DESCRIPTION Flat, open, and sandy. Scattered Boscia and Dobera otherwise low bushes and shrubs. Good grass cover poor herb cover.

SOIL - General Deep fine sand with calcareous nodules

Auger Rock at 65 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		D. glabra	+	
		B. minimifolia	+	
		E. cuneata	+	
		Commiphora sp.		
		A. edgeworthii		
		I. ruspolii		
		J. villosa		
		B. edulis		
31	"Handrue"	A. globosa		
		Aristida sp.		
		C. aucheri		
		S. ruspolianus		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9 10	42/8/5	Adenia globosa
	11	42/8/6	RSP
	12	42/8/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 42/9

Date: 1/3/79 Observer: Beckett Altitude 60 m

Site Location - Lat. $6^{o}15'$ Long. $48^{o}28'$ Map Sheet No. 32

GENERAL DESCRIPTION Flat to slightly undulating, sandy and open. Scattered *Dobera* trees.

SOIL - General Deep fine quartz sand. Loosely consolidated.

Auger No rock at 140 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	31%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		D. glabera	+	
		E. cuneata	+	
		B. minimifolia		
		A. edgeworthii		
		2 Commiphora spp.		
		J. villosa		
		Indigofera sp.		
		A. sieberana		
		Aristida sp.		
		L. senegalensis		
		S. ruspolianus		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9 / 8	42/9/5	RSP
	9	42/9/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 42/10

Date: 1/3/79 Observer: Beckett Altitude 90 m

Site Location - Lat. 6°15' Long. 48°22' Map Sheet No. 32

GENERAL DESCRIPTION Sandy depression between two low ridges. Occasional limestone outcrops, open vegetation.

SOIL - General Fine quartz sand with small calcareous fragments.

Auger Rock at 75 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	26%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other information
		S. busseanus		
		B. minimifolia	All species abundant	
		B. orbicularis		
		J. villosa		
		E. cuneata		
		Commiphora sp.		
		I. ruspolii		
		P. revoilii		
		B. edulis		
		A. sieberana		
		D. scindicum		
		S. ruspolianus		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 9/14	42/10/5	RSP
	15	42/10/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 43/2

Date: 8/4/79 Observer: Beckett Altitude 220 m.

Site Location - Lat. 6°00' Long. 46°39' Map Sheet No. 29

GENERAL DESCRIPTION Flat, sandy, occasional limestone outcrops. Thin Acacia/Indigofera scrub. Poor grass cover.

SOIL - General Medium particled quartz sand.

Auger Rock at 50 cm Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	41%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii	+	
		A. horrida		
		Commiphora sp		
		I. ruspolii	+	
		Indigofera sp.		
		Blepharis sp.		
		I. rotundifolia		
		A. sieberana		
		L. senegalensis		
		Enteropogon sp.		
		C. ciliaris		

- Growth stages Vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 43/3

Date: 8/4/79 Observer: Beckett Altitude 300 m

Site Location - Lat. 6°00' Long. 46°07' Map Sheet No. 29

GENERAL DESCRIPTION Flat, sandy, some surface rocks, low bushes and shrubs, thin Acacia/Indigofera scrub, poor grass cover.

SOIL - General Fine to medium particled sand over limestone

Auger Rock at 60 cm Colour 2.5 YR. 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii	+	
		A. horrida		
		Dalbergia sp.		
		Indigofera sp.		
		I. ruspolii	+	
		Indigofera sp.		
120		Commiphora sp.		
97		Cleome sp.		
		A. sieberana		
		Enteropogon sp.		
		L. senegalensis		

- Growth stages Vegetation flowering and pre flowering

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 43/4

Date: 20/4/79 Observer: Beckett Altitude 270 m.

Site Location - Lat. 5°50' Long. 46°42' Map Sheet No. 36

GENERAL DESCRIPTION Flat, sandy, low shrubs and bushes. Poor grass cover medium herb cover.

SOIL - General Deep medium to coarse sand, becoming redder with depth.

Auger - Colour 2.5YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 62%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
142		A. edgeworthii I. ogadensis I. rotundifolia J. dichtar Cassia sp. Pleuropterantha revoilii Cissus sp. Commiphora sp.	All species	
143	"Cue-fi-i"	Caucanthus sp. Blepharis edulis L. senegalensis		

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 12/27	43/4/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 43/5

Date: 18/4/79 Observer: Beckett Altitude 290 m

Site Location - Lat. 5°54' Long. 46°34' Map Sheet No. 36

GENERAL DESCRIPTION Flat, sandy with occasional limestone outcrops. Chiefly low shrubs and herbs, poor grass cover.

SOIL - General Medium particled sand. Very shallow to medium depth.

Auger Rock at 0 - 80 cm. Colour 2.5 YR 4/7 red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	low variety
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	50%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. horrida		
		A. edgeworthii	All species abundant	
		C. ancistrophora		
		Commiphora sp.		
		C. flaviflora		
		S. busseanus		
		I. ruspolii		
		Cissus sp.		
		Grewia sp.		
		B. orbicularis		
		J. villosa		
		J. dichtar		
123		Ormocarpum sp.		
124		Pleuropterantha revoilii		
		L. senegalensis		
		A. kelleri		
		Aristida sp.		

- Growth stages Vegetation flowering and pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 44/1

Date: 18/4/79 Observer: Beckett Altitude 310 m

Site Location - Lat. $5^{o}54'$ Long. $46^{o}25'$ Map Sheet No. 35

GENERAL DESCRIPTION: Flat, open, sandy. Acacia tortilis/Aristida grassland. Good herb and grass cover.

SOIL - General Deep medium particled quartz sand becoming redder with depth.

Auger -

pH -

Colour 2.5 YR 3/6 dark red

Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	50%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. tortilis		
		J. dichtar		
		A. edgeworthii		
		I.rotundifolia		
		Cissus sp.		
		Adenium sp.		
126	small herb			
		Commiphora sp.		
		Tiliaceous herbs		
		A. sierberana	+	
		Aristida sp.	+	
		L. senegalensis		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 12/12	44/1/5	RSP
	13	44/1/6	Adenium sp.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 44/2

Date: 18/4/79 Observer: Beckett Altitude

Site Location - Lat. $5^{o}48'$ Long. $46^{o}27'$ Map Sheet No. 35

GENERAL DESCRIPTION Flat sandy

SOIL - General Deep, medium to coarse particled quartz sand, becoming redder with depth.

Auger - Colour 2.5 YR 4/6 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 32%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. tortilis		
		A. edgeworthii	+	
		A. reficiens	+	
		C. flaviflora	+	
		C. ancistrophora	+	
		A. horrida		
		Indigofera sp.		
		I. ruspolii		
		C. cinerascens		
		L. senegalensis		
		Aristida sp.		

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 12/11	44/2/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 44/3

Date: 20/4/79 Observer: Beckett Altitude 260 m.

Site Location - Lat. $5^{o}45'$ Long. $46^{o}42'$ Map Sheet No. 36

GENERAL DESCRIPTION Flat, sandy, low shrubs and bushes. Medium grass and herb cover.

SOIL - General Deep medium to coarse quartz sand.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. tortilis		
		L. glutinosa	All species abundant	
		A. edgeworthii		
		I. ogadensis		
		E. cuneata		
144	"Cahn sole"	Cassia sp.		
		Commiphora sp.		
		Pleuropterantha revoilii		
		A. mellifera		
		A. sieberana		

- Growth Stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 **SAMPLING SITE DESCRIPTIONS** **SITE NO.** 45/4

Date: 8.4.79 Observer: Beckett Altitude 280 m.

Site Location - Lat. 6°00' Long. 46°50' Map Sheet No. 29

GENERAL DESCRIPTION Gently undulating, sandy with limestone ridges. Low shrubs and bushes, medium herb cover, poor grass cover.

SOIL - General Medium particled quartz sand.

Auger Rock at 50 cm Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	38%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		E. longispina	All species abundant	
		E. cuneata		
		C. flaviflora		
		Commiphora sp.		
		G. tenax		
		A. edgeworthii		
99	"Meduyo"	I. donaldsonii		
		I. sparteola		
		Iphionia rotundifolia		
		Pleuroptorantha revoilii		
		A. sieberana		
		A. kelleri		

- Growth stages Vegetation flowering and pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 45/5

Date: 9/4/79 Oberver: Beckett Altitude 240 m.

Site Location - Lat. 6°00' Long. 47°06' Map Sheet No. 30

GENERAL DESCRIPTION Flat, sandy with many limestone outcrops. Chiefly low bushes and herbs. Medium grass and herb cover.

SOIL - General Shallow fine to medium particle quartz sand.

Auger Rock at 20 cm Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Occasional termitaria
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	40%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworhtii		
		C. flaviflora		
		Commiphora sp.		
		B. orbicularis		
		E. cuneata		
105		D. glomerata		
103		Solanum sp.		
101		Euphorbia sp.		
102		Hildebrantia sp.		
		L. gluntinosa		
		I. ruspolii		
		Enteropogon sp.		
		A. sieberana		
		L. senegalensis		

- Growth stages Woody vegetation pre flowering and flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 11/25	45/5/3	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 45/8

Date: 15/4/79 Observer: Beckett Altitude 230 m

Site Location - Lat. 5° 51' Long. 47° 05' Map Sheet No. 37

GENERAL DESCRIPTION Flat, sandy medium thick mixed bush. Medium grass and herb cover.

SOIL - General Deep fine to coarse particled quartz sand, becoming redder with depth.

Auger No rock at 140 cm Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	This area widely burnt
VEGETATION - Ground cover	44%
- Components:	

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii	All species abundant	
		L. glutinosa		
120		2 Commiphora spp.		
		C. erinanthera		
		C. ancistrophora		
		B. orbicularis		
	"Adorh"	S. jubae		
		S. busseanus		
		E. cuneata		
		Indigofera sp.		
		A. sierberana		
		L. senegalensis		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 12/10	45/8/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 45/9

Date: 18/4/79 Observer: Beckett Altitude 320 m.

Site Location - Lat. 5°54' Long. 46°22' Map Sheet No. 35

GENERAL DESCRIPTION Flat, sandy, Aristida grassland with scattered Acacia tortilis trees. Good grass cover, poor herb cover.

SOIL - General Deep, medium to coarse particled sand.

Auger - Colour 2.5 YR 3/6 dark red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground Cover 34%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. tortilis	+	
		A. edgeworhtii		
		C. flaviflora	+	
		Commiphora sp.		
		Triumphetta sp,		
		I. rotundifolia		
		Blepharis sp.		
		A. sieberana	+	
		Aristida sp.	+	

- Growth stages All vegetation pre flowering

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 45/10

Date: 18/4/79 Observer: Beckett Altitude 310 m

Site Location - Lat. 5°51' Long. 46°17' Map Sheet No. 35

GENERAL DESCRIPTION Flat sandy, open and treeless. Good grass and herb cover.

SOIL - General Deep coarse particled sand, becoming redder with depth

Auger - Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	67%

- Components:

Collection Number	Local Names	Identification	Abundance	Use and other Information
		C. flaviflora		
		I. rotundifolia		
	Unidentified herb "Da-ul		+	
		Blepharis sp.		
		Unidentified grass	+	

- Growth stages All vegetation pre flowering and very dry

PHOTOGRAPHS

Serial Number	Reference Number	Contents
J 12/14	45/10/5	RSP
15	45/10/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 45/12

Date: Observer: Beckett Altitude 279 m.

Site Location - Lat. 5°53' Long. 46°42' Map Sheet No. 36

GENERAL DESCRIPTION Flat, sandy, thick bush. Good herb cover, poor grass cover.

SOIL - General Deep, medium to coarse particled sand.

Auger - Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 45%

- Components:

Collection Number	Local Names	Identification	Abundance	Use and other Information
		A. edgeworthii		
	'Laba alyole"	Cissus sp.		
		I. rotundifolia		
		J. villosa		
	"Guweh"	Commiphora sp.		
		I. ogadensis		
		C. ciliaris		
		L. senegalensis		
		A. sieberana		

- Growth Stages

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 45/14

Date: 15/4/79 Observer: Beckett Altitude 190 m

Site Location- Lat. 5°46' Long. 47°22' Map Sheet No. 37

GENERAL DESCRIPTION Flat, sandy, low bushes and shrubs. Medium herb cover poor grass cover.

SOIL - General Fine quartz sand.

Auger Rock at 80 cm Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	36%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
	"Adorh"	S. jubae		
		B. orbicularis	All species abundant	
		E..cuneata		
		C. ancistrophora		
		A. edgeworthii		
		J. dichtar		
		Cissus sp.		
		I. rotundifolia		
		J. villosa		
		L. glutinosa		
		T. flavescens		
		Commiphora sp.		
		I. ruspolii		
		A. sierbeana		
		Aristida sp.		
		L. senegalensis		

- Growth stages Vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTION SITE NO. 45/16

Date: 20/4/79 Observer: Beckett Altitude 250 m

Site Location - Lat. 5°37' Long. 46°42' Map Sheet No. 43

GENERAL DESCRIPTION Flat, sandy, low bushes, good herb cover, poor grass cover.

SOIL - General Deep fine sand, becoming redder with depth

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Goats

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 53%

- Components:

Collection Local	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii		
		L. glutinosa		
		E. cuneata		
144		Cassia sp.		
		Indigofera sp.		
		Cissus sp.		
		C. flaviflora		
		A. mellifera		
		C. erianthera		
		Tiliaceous herbs		
148	Unidentified tree "Garandro"	....		
		L. senegalensis		
149	liliaceae			
		Aristida sp.		

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 12/28	45/16/5	RSP
	29	45/16/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 45/18

Date: 21/4/79 Observer: Beckett Altitude 220 m.

Site Location - Lat. 5°32' Long. 46°58' Map Sheet No. 43

GENERAL DESCRIPTION Gently undulating with small hills, sandy, medium thick mixed bush. Poor to medium grass cover. Poor herb cover.

SOIL - General Deep medium particled sand.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Area has been extensively burned.

VEGETATION - Ground cover 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		S. busseanus		
		A. edgeworthii	All species abundant	
		Rhynchosia sp.		
		Cassia sp.		
		L. glutinosa		
		C. ancistrophora		
		Commiphora sp.		
		C. erianthera		
		J. dichtar		
		B. orbicularis		
148	"Garandro"	unidentified tree		
145		Triocodesma sp.		
147	unidentified	Sedge		
		A. sierberana		
		L. senegalensis		
		C. ciliaris		

- Growth stages Woody vegetation pre flowering and fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 46/1

Date: 8/4/79 Observer: Beckett Altitude 290 m

Site Location - Lat. $6^{o}05'$ Long. $46^{o}50'$ Map Sheet No. 29

GENERAL DESCRIPTION Flat, sandy, with limestone ridges. Low bushes and shrubs, medium herb cover, poor grass cover.

SOIL - General Medium particled quartz sand.

Auger - Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 53%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii	+	
		Indigofera sp.	+	
		E. cuneata		
		E. longispina		
		J. dichtar		
	"Garon"	Commiphora sp.		
		I. rotundifolia		
		Aristida sp.		
		C. ciliaris		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 46/2

Date: 9/4/79 Observer: Beckett Altitude 270 m

Site Location - Lat. 6°05' Long. 46°57' Map Sheet No. 29

GENERAL DESCRIPTION Very gently undulating - sandy with outcrops of limestone and scattered surface rocks. Low bushes and scattered Boscia sp.

SOIL - General Shallow medium particled quartz sand

Auger - Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 51%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
100		E. cuneata	All species abundant	
		E. longispina		
		S. busseanus		
		A. edgeworthii		
		C. flaviflora		
		J. villosa		
		J. dichtar		
		B. minimifolia		
		D. glabra		
		Cissus sp.		
		I. rotundifolia		
		Commiphora sp.		
		Pleuropterantha sp.		
		I. ruspolii		
		Indigofera sp.		
		A. sieberana		
		A. kelleri		
		Enteropogon sp.		

- Growth stages Vegetation flowering and pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 11/24	46/2/4	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 47/1

Date: 19/4/79 Observer: Beckett Altitude 270 m.

Site Location - Lat. $5^{o}29'$ Long. $46^{o}15'$ Map Sheet No. 42

GENERAL DESCRIPTION Undulating limestone ridges and sandy hollows.
Medium herb cover and poor grass cover.

SOIL - General Generally very shallow sand but becoming deeper in hollows hollow.

Auger -

pH -

Colour -

Other Comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Occasional low variety
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil

VEGETATION - Ground cover

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
	"Fulai"	Acacia sp.		
		A. horrida	All species abundant	
		A. edgeworthii		
		G. tenax		
		C. anicistrophora		
		S. busseanus		
		I.rotundifolia		
		E. cuneata		
		I. ruspolii		
137		T. orbicularis		
		Cassia sp.		
		C. erianthera		
		Commiphora sp.		
		A. kelleri		
		Aristida sp.		
		Enteropogon		

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 47/2

Date: 20/4/79 Observer: Beckett Altitude 260 m

Site Location - Lat. 5°27' Long. 46°19' Map Sheet No. 42

GENERAL DESCRIPTION Limestone area, medium thick Acacia/Commiphora bush. Poor grass and herb cover.

SOIL - General Shallow fine sand, becoming deeper in hollow

Auger -

pH -

Colour 5 YR 5/8 yellowish red

Other Comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 48%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii		
		A. horrida		
	"Fulai"	Acacia sp.		
		G. tenax		
		B. minimifolia		
		3 Commiphora spp.		
		S. busseanus		
		A. aff. tortilis		
		Cephalocroton sp.		
		I. ruspolii		
	very low bush "Adad"	A. paradoxa		
		I. donaldsonii		
		C. cinerascens		
		T. spathaceus		
		A. kelleri		

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 12/25	47/2/5	RSP
	26	47/2/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 47/3

Date: 20/4/79 Observer: Beckett Altitude 260 m.

Site Location - Lat. $5^{o}26'$ Long. $48^{o}21'$ Map Sheet No. 42

GENERAL DESCRIPTION Undulating limestone hollows and ridges. Medium thick Acacia/Commiphora bush, medium herb and grass cover.

SOIL - General Very shallow fine sand over limestone

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA present

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 50%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. Trisulcus		
		A. edgeworthii		
		D. glabra		
139		Cephalocroton sp.		
		A. horrida	+	
		Grewia sp.		
		G. tenax		
		I. donaldsonii		
		3 Commiphora spp.	+	
		Lannea sp.		
140		J. villosa		
		S. ruspolianus		
		A. kelleri		
		Aristida sp.		

- Growth stages Woody vegetation flowering

PHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 48/2

Date: 9/4/79 Observer: Beckett Altitude 220 m

Site Location - Lat.6°01' Long.47°23' Map Sheet No. 30

GENERAL DESCRIPTION Flat open, Euphorbia/Aristida scrub with scattered Balanites. Medium grass cover.

SOIL - General Fine powdery sand with many small calcareous rock particles.

Auger Rock at 20 cm Colour 7.5 YR 5/6 strong brown

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	29%

Vegetation - Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		E. cuneata	+	
		B. orbicularis		
		Commiphora sp.		
		L. distichum		
		Barleria sp.		
		A. kelleri	+	
		C. aucheri		
		S. ruspolianus		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 11/27	48/2/1	RSP
	28	48/2/2	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 48/3

Date: 9/4/79 Observer: Beckett Altitude 210 m

Site Location - Lat. 6°07' Long. 47°26' Map Sheet No. 30

GENERAL DESCRIPTION Flat, sandy, surface strewn with small limestone fragments. Poor grass and herb cover.

SOIL - General Fine powdery sand with many small limestone fragments

Auger Rock at 30 cm Colour 7.5 YR 5/6 strong brown

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	low variety
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	28%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		C. heterotricha		
		E. cuneata	All species abundant	
		B. minimifolia		
		C. erianthera		
		E. somalensis		
		C. flaviflora		
		C. ancistrophora		
		2 Commiphora spp.		
		I. rotundifolia		
	Unidentified	Compositae		
		I. ruspolii		
		A. kelleri		

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 48/5

Date: 13/4/79 Observer: Beckett Altitude 190

Site Location - Lat. 6°01' Long. 47°30' Map Sheet No. 31

GENERAL DESCRIPTION Flat open, low shrubs and bushes - scattered Boscia minimifolia . poor grass cover. Surface rock strewn

SOIL - General Shallow fine sand withmany calcareous fragments and rocks.

Auger - Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 20%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minimifolia		
		E. somalensis	All species abundant	
		E. cuneata		
		2 Commiphora spp.		
		C. ancistrophora		
		A. edgeworthii		
	very low bush "Adad"	A. paradoxa		
		A. horrida		
		L. distichum		
		Crotolaria sp.		
		Barleria sp.		
		A. kelleri		
		S. ruspolianus		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 11/33	48/5/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 48/7

Date: 15/4/79 Observer: Beckett Altitude 170 m

Site Location - Lat. 5°46' Long. 47°14' Map Sheet No.37

GENERAL DESCRIPTION Gently sloping valley floor between limestone escarpments fairly open with scattered Acacia tortilis. Good herb cover, medium grass cover. Heavily grazed.

SOIL - General Deep very fine silty sand.

Auger No rock at 120 cm Colour 5 YR 5/8 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING No cultivation now but evidence of previous cultivation

OTHERS Nil

VEGETATION - Ground cover 48%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. tortilis		
		Cassia sp.		
		A. aff. edgeworhtii		
		A. edgeworthii		
		C. glandulosa		
		J. dichtar		
		S. persica		
		L. glutinosa		
		I.ruspolii	+	
		Indigofera sp.		
		Blepharis sp.	+	
119		Pavonia zeylanica		
		Aristida sp.		
		Enteropogon sp.		
		L. senegalensis		

- Growth stages Vegetation flowering and pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 12/7-8	48/7/5-6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 48/8

Date: 15/4/79 Observer: Beckett Altitude 170 m

Site Location - Lat. 5°46' Long. 47°17' Map Sheet No. 37

GENERAL DESCRIPTION Slightly gypcesous sand, surface rock strewn and some anhydrite outcrops. Thin Caesalpina bush, poor grass cover, medium herb cover.

SOIL - General Shallow to deep fine sand over gypsum.

Auger Rock at 0 - 140 cm Colour Varies enormously 2.5 YR 4/8 red to 5 YR 5/6 yellowish red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	40%

- Components:

Collection Number	Local name	Identification	Abundance	Use and other Information
		B. orbicularis		
		C. glandulosa		
		S. persica		
		E. cuneata		
		C. erianthera	+	
		Euphorbia sp.		
		C. ancistrophora		
	very low bush "Adad"	A. paradoxa		
		I.donaldsonii		
		A. aff. edgeworthii		
		A. edgeworthii		
	"Suf daworh"	Gossypium sp		
118	Cyperaceae			
		A. sieberana		
		S. ruspolianus		

- Growth stages Vegetation flowering and pre flowering

PHOTOGRAPHS Serial Number Reference Number Contents

No photographs

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 48/9

Date: 9/4/79 Observer: Beckett Altitude 220 m.

Site Location - Lat. 6°01' Long. 47°14' Map Sheet No. 30

GENERAL DESCRIPTION Flat to gently sloping, rocky. Chiefly low shrubs and herbs with scattered Balanites. Surface strewn with limestone rocks.

SOIL - General Very shallow fine quartz sand over limestone.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 35%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. edgeworthii	+	
		E. cuneata	+	
		B. orbicularis		
		B. minimifolia		
		C. glanduloea		
		C. flaviflora		
		Commiphora sp.		
		A. reficiens		
		A. horrida		
		Barleria sp.		
		I. ruspolii	+	
		C. aucheri		
		A. kelleri		
		Aristida sp.		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 11/26	48/9/3	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO.48/10

Date: 14/4/79 Observer: Beckett Altitude 150 m

Site Location - Lat. 5°48' Long. 47°31' Map Sheet No.38

GENERAL DESCRIPTION Flat to gently slopping, sandy, medium grass cover rather open with mixed vegetation.

SOIL - General Fine sand with many limestone fragments.

Auger Becoming very rocky at 50 cm Colour -

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	41%

- Components;

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minimifolia	All species abundant	
		D. glabra		
		C. flaviflora		
		J. dichtar		
		A. edgeworthii		
		C. ancistrophora		
115		S. busseanus		
		I. donaldsonii		
		I. rotundifolia		
		I. ruspolii		
116		Kellerohia sp.		
		A. kelleri		
		A. sierberana		
		L. senegalensis		

- Growth stages Woody vegetation flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 12/ 6	48/10/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 48/11

Date: 14/4/79 Observer: Beckett Altitude 160 m

Site Location - Lat. $5^{o}49'$ Long. 47^{o} 35' Map Sheet No. 38

GENERAL DESCRIPTION Flat, occasional bushes and low shrubs. Good but patchy grass cover with many bare areas. Pinkish limestone outcrops and surface strewn with limestone fragments.

SOIL - General Fine sand with limestone fragments

Auger Rock at 30 cm Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Present
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	34%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		E. cuneata	All species abundant	
		J. villosa		
		Commiphora spp.		
		I. donaldsonii		
		C. ancistrophora		
		A. edgeworthii		
	very low bush "Adad"	A. paradoxa		
		M. angolensis		
		B. orbicularis		
		C. flaviflora		
257	Unidentified	Convolvulaceae		
		Blepharis sp.		
		Hibiscus sp.		
		A. sierberana		
		L. senegalensis		
		A. kelleri		
		S. ruspolianus		

- Growth stages All vegetation pre flowering

TOGRAPHS	Serial Number	Reference Number	Contents
	J 12 / 4	48/11/5	RSP
	5	48/5/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 49/3

Date: 14/4/79 Observer: Beckett Altitude 160 m

Site Location - Lat. 5°48' Long. 47°43' Map Sheet No. 38

GENERAL DESCRIPTION Flat, stoney, low shrubs and scattered Acacia sp., medium herb cover, poor grass cover.

SOIL - General Shallow fine sand with small limestone fragments some pinkish limestone outcrops.

Auger Rock at 0 - 30 cm Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA occasional low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 46%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
114	"Wa-ra-wa"	Acacia sp.	+	
		E. cuneata	+	
		A. edgeworthii	+	
		J. dichtar		
		B. minimifolia		
		S. busseanus		
		C. ancistrophora		
		Commiphora sp.		
		I. ruspolii		
	very low bush "Adad"	A. paradoxa		
		Blepharis sp.		
		C. aucheri		
		A. kelleri	+	
		Enteropogon sp.		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 12/35a	49/3/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO 49/4

Date: 14/4/79 Observer: Beckett Altitude 150 m

Site Location - Lat. 5° 48' Long. 47° 46' Map Sheet No. 38

GENERAL DESCRIPTION Flat, stoney, very low shrubs and bushes. Medium grass and herb cover.

SOIL - General Shallow fine sand with small limestone fragments.

Auger Rock at 10 - 20 cm Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 38%

- Components

Collection Number	Local names	Identification	Abundance	Use and other Information
		E. cuneata	+	
		A. edgeworthii	+	
		M. angolensis		
		B. minimifolia		
		C. ancistrophora		
		J. dichtar		
		Commiphora sp.		
		A. kelleri	+	
		S. ruspolianus		
		C. aucheri		

- Growth stages Vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 11/36a	49/4/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 49/5

Date: 20/4/79 Observer: Beckett Altitude 180 m

Site Location - Lat. 6°01' Long. 47°38' Map Sheet No. 31

GENERAL DESCRIPTION Flat to gently sloping, sandy with stone strewn surface. Small bushes and trees. Poor herb and grass cover.

SOIL - General Shallow fine sand over limestone.

Auger Rock at 0 - 20 cm Colour 5 YR 5/6 yellowish red

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	38%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minimifolia	All species abundant	
		J. dichtar		
		I donaldsonii		
		L. glutinosa		
		A. aff.tortilis		
		2 Commiphora spp.		
		B. orbicularis		
		E. somalensis		
		E. longispina		
		S. busseanus		
		E. cuneata		
		Barleria sp.		
		Blepharis sp.		
110	"Taraho"	Jatropha sp.		
		A. kelleri		
		Aristida sp.		
		L. senegalensis		
		T. spathaceus		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 57/6

Date: 14/4/79 Observer: Beckett Altitude 160 m

Site Location - Lat. 5°48' Long. 47°39' Map Sheet No. 38

GENERAL DESCRIPTION Generally flat but with some small limestone hills. Chiefly low shrubs and herbs some small sandy banks.

SOIL - General Shallow fine sand. Surface strewn with limestone rocks.

Auger Rock at 20 cm Colour 7.5 YR 5/5 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	23%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		E. cuneata	All species abundant	
		C. flaviflora		
		J. villosa		
		Zygophyllum sp.		
		S. pycnophylla		
		A. reficiens		
		A. aff. tortilis		
		C. heterotricha		
		L. distichum		
		I.ruspolii		
		S. ruspolianus		
		D. scindicum		
		A. kelleri		
		C. aucheri		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 57/8

Date: 14/4/79 Observer: Beckett Altitude 150 m

Site Location - Lat. $5^{o}44'$ Long. $47^{o}43'$ Map Sheet No. 38

GENERAL DESCRIPTION Flat, scattered small sandy banks. Open vegetation with scattered Acacia aff. tortilis bushes. Extensive bare patches, patchy grass cover - good to poor.

SOIL - General Fine surface sand to 5 cm overlying deep clay with calcareous flecks.

Auger - Colour 7.5 YR 4/6 strong brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 33%

- Components:

Collection Number	Local Names	Identification	Abundance	Use and other Information
	"Gulen"	S. pycnophylla	+	
		A. aff. tortilis	+	
		2 Commiphora spp.		
		L. distichum		
	small leaved	Jatropha sp.		
		S. ruspolianus	+	
		C. aucheri	+	
		D. scindicum		

- Growth stages All vegetation pre flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 12/ 1	57/8/5	RSP
	2	57/8/6	RSP
	3	57/8/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 58/2

Date: 6/7/79 Observer: Beckett Altitude 180 m

Site Location - Lat. 4°28' Long. 45°16' Map Sheet No. 63

GENERAL DESCRIPTION Flat to very gently sloping. Surface strewn with small limestone chips. Medium thick mixed bush. Poor grass and herb cover except for annual grasses.

SOIL - General Very shallow silty sand with many limestone fragments.

Auger - Colour 7.5 YR 5/6 Brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 45%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. horrida	All species abundant	
		A. trisulcus		
		A. tortilis		
		G. tenax		
		Grewia sp.		
		B. minimifolia		
		Cordia sp.		
		Lannea sp.		
	single hooked thorn	Acacia sp.		
		E. bifida		
		3 Commiphora spp.		
		Gossypium sp.		
		C. glandulosa		
	small leaved	Indigofera sp.		
		Malvaceous herb		
		S. hirtigluma		
		Ann. Aristida sp.		
		Ann. Tetrapogon sp.		

- Growth stages Woody vegetation fruiting and post fruiting, grass seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 19/5	58/2/5	RSP
	6	58/2/6	RSP
	7	58/2/7	RSP
	8	58/2/8	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 58/3

Date: 6/7/79 Observer: Beckett Altitude 180m

Site Location - Lat. 4°26' Long. 45°16' Map Sheet No. 63

GENERAL DESCRIPTION Flat to gently sloping. Rocky limestone surface with medium thick mixed bush. Poor grass and herb cover (except annual grass cover).

SOIL - General Very shallow, fine silty sand.

Auger - Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Goats

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 38%

- Components:

Collection No.	Local Name	Identification	Abundance	Use and other Information
		Boswellia sp.		
350	"Mirias"	Grewia sp.		
		Grewia tenax		
		A. tortilis		
		A. trisulcus		
		Cordia sp.		
		E. bifida		
		Z. hamur	All species abundant	
		Commiphora sp.		
		E. cuneata		
	"Wa-an-ri"	Lannea sp.		
		A. reficiens		
		I. rotundifolia		
	"Guri Haris"	Heliotropium sp.		
		C. cinerascens		
		E. cenchroides		
		S. hirtigluma		
		D. scindicum		

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 19/ 2	58/3/5	R.S.P.
	3	58/3/6	Boscia sp. at site
	4	58/3/7	R.S.P.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 59/4

Date: 7/7/79 Observer: Beckett Altitude 250 m.

Site Location - Lat. 4°23' Long. 45°04' Map Sheet No. 63

GENERAL DESCRIPTION Flat clay plain with arced vegetation, medium thick mixed bush alternating with extensive grassless areas.

SOIL - General Deep fine clay with small limestone fragments

Auger - Colour 5 YR 5/8 strong brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Not estimated

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		E. robecchii		
		Cordia sp.	All species abundant	
		A. horrida		
		A. mellifera		
		G. tenax		
		3 Commiphora spp.		
		B. minimifolia		
		C. glandulosa		
		B. fructicosum		
		Heliotropium sp.		
	yellow flowers	Barleria sp.		
352		C. aucheri		
357	unidentified	grass		
		Andropogor sp.		
		D. scindicum		
		S. hirtigluma		
		A. kelleri		
		Sporobolus sp.		

- Growth stages All vegetation fruiting or post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 20/15	59/4/1	Euphorbia robbecchii trees at site
	16	59/4/2	RSP
	17	59/4/3	RSP
	18	59/4/4	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 59/5

Date: 7/7/79 Observer: Beckett Altitude 225 m.

Site Location - Lat. 4°27' Long. 45°06' Map Sheet No. 63

GENERAL DESCRIPTION Flat clay plain. Arced vegetation, thick mixed bush alternating with open grassless areas.

SOIL - General Fine clay and sand with limestone fragments

Auger - Colour 5 YR 5/8 strong brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 31%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. horrida		
		A. mellifera		
		D. glabra	All species abundant	
		A. trisulcus		
		C. glandulosa		
		Cordia sp.		
		3 Commiphora spp.		
		A. reficiens		
		G. tenax		
		Grewia sp.		
		S. hirtigluma		
		D. scindicum		
		S. spicatus		
		Sporobolus sp.		
	Annual	Aristida sp.		
	Annual	Tetrapogon sp.		

- Growth stages All vegetation post fruiting and seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 20/12	59/5/5	RSP
	13	59/5/6	RSP
	14	59/5/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 59/6

Date: 7/7/79 Observer: Beckett Altitude 203 m

Site Location - Lat. $4^{o}36'$ Long. $45^{o}34'$ Map Sheet No. 63

GENERAL DESCRIPTION Flat clay plain, arced vegetation, medium thick mixed bush alternating with open grassless areas. Herb and grass cover poor.

SOIL - General Deep fine (powdery) clay and silt.

Auger - Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Not estimated

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
351		A. trisulcus	All species abundant	
		C. glandulosa		
		A. aff·senegal		
		Commiphora sp.		
	lanceolate leaved	Cadaba sp.		
		Grewia sp.		
		~~Grewia tenax~~		
		E. cuneata		
	small leaved	Jatropha sp.		
		C. microphyllum		
		Heliotropium sp.		
		Sporobolus sp.		
		C. aucheri		
	unidentified	grass		

- Growth stages Woody vegetation post seeding
grass post seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 20/ 9	59/6/5	RSP
	10	59/6/6	RSP
	11	59/6/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 63/4

Date: 26/6/79 Observer: Beckett Altitude 120 m

Site location - Lat. 5°19' Long. 47°50' Map Sheet No. 53

GENERAL DESCRIPTION Flat sandy, low shrubs, and bushes. Grass cover medium to good. Herb cover nil

SOIL - General Deep, very fine sand. Well consolidated.

Auger - Colour 7.5 YR 6/6 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 56%

- Components:

Collection number	Local Name	Identification	Abundance	Use and other Information
		D. glomerata	+	
		A. edgeworthii	+	
		I. donaldsonii		
		E. longispina		
		D. glabra		
		3 Commiphora spp.		
		E. cuneata		
		A. kelleri		
		L. senegalensis		
		D. scindicum		
		H. contortus		

- Growth stages Woody vegetation fruiting and post fruiting. Grass, seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 16/11	63/4/5	RSP
	12	63/4/6	RSP
	13	63/4/7	RSP

N.B. This site has been ommited from the 1:000,000 and 1:250,000 maps but is is located at the junction where the NS trace meets the Road

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 63/5

Date: 26/6/79 Observer: Beckett Altitude 134 m

Site location - Lat. $5^{o}15'$ Long. $47^{o}41'$ Map Sheet No.53

GENERAL DESCRIPTION Flat, sandy, occasional pinkish limestone ridges. Medium to thick bush, poor herb/grass cover

SOIL - General Deep quartz sand

Auger -

pH -

Colour 5 YR 5/8 yellowish red

Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground Cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. reficiens	+	
		D. glabra		
		A. edgeworthii		
		B. orbicularis		
		A. kelleri		
		L. senegalensis		

- Growth stages All vegetation post fruiting and very dry

PHOTOGRAPHS

Serial Number	Reference Number	Contents
J/16 9	63/6/5	RSP
10	63/6/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 63/6

Date: 26/6/79 Observer: Beckett Altitude 139 m.

Site location - Lat. 5°12' Long. 47°35' Map Sheet No. 53

GENERAL DESCRIPTION Uneven sandy plain, A. reficiens dominant. Thin bush, poor grass and herb cover.

SOIL - General Deep unconsolidated quartz sand

Auger - Colour 4 YR 5/8 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Small sand banks around the bases of A. reficiens bushes

VEGETATION - Ground Cover 49%

- Components:

Collection Number	Local Names	Identification	Abundance	Use and other Information
		A. reficiens		
		B. orbicularis	All species abundant	
		D. glabra		
		I. donaldsonii		
		3 Commiphora spp.		
	Small bush	A. aff.senegal		
		Hildebrantia sp.		
		A. horrida		
		A. edgeworthii		
		I. ruspolii		
		S. pynophylla		
320	Small tree	Cadaba sp.		
		A. kelleri		
		L. seneglensis		

- Growth stages All vegetation post fruiting and very dry

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 16 6	63/6/5	RSP
	7	63/6/7	RSP
	8	63/6/5	RSP

APPENDIX 101 SAMPLING SITE DESCRIPTIONS SITE NO. 64/1

Date: 25/6/79 Observer: Beckett Altitude 220 m.

Site Location - Lat. 5°12' Long. 46°25' Map Sheet No. 50

GENERAL DESCRIPTION Flat, fairly open, scattered Dobera trees, good grass/herb cover.
A few small surface rocks.

SOIL - General Fine sand with silt, and many small limestone chips.

Auger - Colour 7.5 YR 6.4 light brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Tall variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 49%

- Components:

Collection No.	Local Name	Identification	Abundance	Use and other Information
		D. glabra	+	
		Commiphora sp.	+	
		E. longispina		
		C. glandulosa		
		B. minimifolia		
		A. tortilis		
		A. reficiens		
		E. cuneata		
314	Unidentified tree			
		Chascanum sp.		
		Hibiscus sp.		
		Pavonia sp.		
		Solanum sp.		
		Veronia sp.		
		A. kelleri		
		L. senegalensis		
		D. scindicum		
		Annual Aristada sp.		

- Growth stages All vegetation flowering and fruiting.

PHOTOGRAPHS	Serial No.	Reference No.	Contents
	J 15/22	64/1/9	RSP
	23	64/1/10	RSP
	24	64/1/11	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 68/2

Date: 7/7/79 Observer: Beckett Altitude 330 m.

Site Location - lat. 4°41' Long. 45°20' Map Sheet No.56

GENERAL DESCRIPTION Rock strewn hill. Medium to thick mixed bush. Very poor herb and grass cover.

SOIL - General Very shallow fine sand over limestone. Extensive limestone outcrops.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Not estimated

- Components

Collection Number	Local Names	Identification	Abundance	Use and other Information
		A. senegal		
		D. glabra		
		3 Grewia spp.		
		Commiphora sp.	All species abundant	
		C. albidus		
		A. edgeworthii		
		A. reficiens		
		E. cuneata		
		B. minimifolia		
		I. rotundifolia		
		A. kelleri		
		Sporobolus sp.		
		D. scindicum		

- Growth stages Woody vegetation fruiting and post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 20/19	68/2/5	RSP
	20	68/2/6	RSP
	21	68/2/7	RSP

APPENDIX 1.01. SAMPLING SITE DESCRIPTIONS SITE NO. 68/3

Date: 7/7/79 Observer: Beckett Altitude 250 m

Site Location - Lat. 4°26' Long. 45°23' Map Sheet No. 63

GENERAL DESCRIPTION Rocky limestone hill. Medium thick Acacia bush. Poor herb and grass cover.

SOIL - General Very shallow fine sand.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Not estimated

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
	single hooked thorn	Acacia unispinosa	+	
		2 Grewia spp.	+	
		A. reficiens	+	
		Z. hamur		
		2 Commiphora spp.		
		T. obbiadensis		
		C. albidus		
		A. horrida		
		D. glabra		
		I. rotundifolia		
		D. scindicum		

- Growth Stages Woody vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 20/28	68/3/5	RSP
	29	68/3/6	RSP
	30	68/3/7	RSP

APPENDIX 1.01. SAMPLING SITE DESCRIPTIONS SITE NO. 69/1

Date: 7/7/79 Observer: Beckett Altitude 176 m

Site Location - Lat. 4°36' Long. 45°18' Map Sheet No. 63

GENERAL DESCRIPTION Flat alluvial clay plain, dominated by Acacia reficiens. Good grass cover, medium herb cover. Heavily grazed and trampled.

SOIL - General Deep fine powdery silt and clay

Auger - Colour 10 YR 6/3 pale brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Cattle

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 46%

- Components:

Collection Number	Local Names	Identification	Abundance	Use and other Information
		A. reficiens	+	
		Cordia sp.		
		Cassia sp.		
		A. horrida		
		A. senegal		
		Z. hamur		
		Veronia sp.		
355	"Sayir"	Panicum sp.		
		D. scindicum		

- Growth stages Grass seeding
Woody vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 20/22	69/1/5	RSP
	23	69/1/6	RSP
	24	69/1/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 69/2

Date: 7/7/79 Observer: Beckett Altitude 179 m.

Site Location - Lat. 4°32' Long: 45°18' Map Sheet No. 63

GENERAL DESCRIPTION Flat alluvial clay plain. 3 km. from Wadi Shabeele. An area heavily cultivated. Scattered shrubs good grass cover, poor herb cover. Heavily grazed and trampled.

SOIL - General Deep fine powdery silt and clay.

Auger - Colour 10 YR 6/3 pale brown

pH - Other comments

SURFACE WATER AND WELLS W. Shabeele 13 km.

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Abandoned and planted cultivations

OTHERS Nil

VEGETATION - Ground cover 43%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
	small leaved	Indigofera sp.		
	large leaved	Indigofera sp.		
		Cordia sp.		
		A. seyal		
		D. scindicum		
		C. ciliaris		

- Growth stages Grass post seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 20/25	69/2/5	RSP
	26	69/2/6	RSP
	27	69/2/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 70/2

Date: 6/7/79 Observer: Beckett Altitude 166 m

Site Location - Lat. 4°23' Long. 45°19' Map Sheet No. 63

GENERAL DESCRIPTION Flat alluvial clay plain. Medium grass and herb cover Very heavily grazed and trampled

SOIL - General Deep alluvial clay.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
CROPPING	Nil
OTHERS	Nil
VEGETATION - Ground cover	26%

- Components:

Collection Number	Local Names	Identification	Abundance	Use and other Information
		A. reficiens	+	
		A. stuhlmanni	+	
		C. quadrilaris		
		Kleinia sp.		
		Asparagus sp.		
349	small shrublet	Disperma sp.?	+	
		D. scindicum		

- Growth stages Woody vegetation fruiting and post fruiting
Herbs flowering

PHTOTOGRAPHS	Serial Number	Reference Number	Contents
	J 19/35	70/2/5	RSP
	36	70/2/6	RSP
	0	70/2/7	RSP
	J 20/1	70/2/8	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 70/3

Date: 6/7/79 Observer: Beckett Altitude 160 m.

Site Location - Lat. 4°14' Long. 45°26' Map Sheet No. 70

GENERAL DESCRIPTION Flat alluvial plain, good grass cover, poor herb cover scattered Dobera and Balanites trees

SOIL - General Deep alluvial clay with calcareous flecks.

Auger - Colour 7.5 YR 4/4 brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 48%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
348		A. seyal	+	
		D. glabra		
		E.spectabilis		
		Indigofera sp.		
		Balanites sp.		
	Unidentified	Acanthaceae		
		L. senegalensis		
	Unidentified	grass	+	

- Growth Stages All vegetation post seeding - site very dry

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 19/27	70/3/5	large Dobera tree at site
	28	70/3/6	RSP
	29	70/3/7	RSP
	30	70/3/8	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 70/4

Date: 6/7/79 Observer: Beckett Altitude 154m

Site Location Lat. $4^{o}02'$ Long. $45^{o}29'$ Map Sheet No. 70

GENERAL DESCRIPTION Flat alluvial plain, open grass land with scattered Terminalia and Balanites trees. Poor good annual grass cover, poor herb cover.

SOIL - General Deep, fine sandy silt with small stone particles.

Auger - Colour 7.5 YR 5/6 strong brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Low, massive variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Not estimated but low

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		Cordia sp.	+	
		Terminalia sp.	+	
		2 Commiphora spp.		
		B. orbicularis		
347		Balanites sp.		
		E. cuneata		
		A. trisulcus		
		Z. hamur		
		A. tortilis		
		Cyclocheilon sp.		
		C. quadrilaris		
		L. senegalensis		
		Annual Aristida sp.		

- Growth stages Woody vegetation fruiting and post fruiting
Grass seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 19/23	70/4/5	RSP
	24	70/4/6	Cordia bush and annual grass
	25	70/4/7	RSP
	26	70/4/8	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE No. 71/3

Date: 29/6/79 Observer: Beckett Altitude 139 m

Site Location - Lat. 4°25' Long. 46°45' Map Sheet No. 66

GENERAL DESCRIPTION Flat, sandy. Thin mixed bush. Good grass cover. Medium herb cover.

SOIL - General Deep fine sand, well consolidated.

Auger - Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Birked near site

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING All surrounding vicinity has been cropped at some time in the past, a few planted areas exist now.

OTHERS Nil

VEGETATION - Ground cover 57%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. reficiens		
		A. edgeworthii		
		3 Commiphora spp.		
		C. flaviflora		
		S. busseanus		
		D. glabra		
		E. cuneata		
		E. longispina		
		J. dichtar		
		Cordia sp.		
		Lannea sp.		
		Dalbergia sp.		
		C. cinerascens		
		T. flavescens		
		Pavonia sp.		
		Hibiscus sp.		
		Veronia sp.		
		D. scindicum		
		A. sierberana		
		Aristida sp.		
		L. senegalensis		

- Growth stages Woody vegetation fruiting
Herbs and grass flowering and fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 17/19	71/3/4	RSP
	20	71/3/5	RSP
	21	71/3/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE No. 71/4

Date: 29/6/79 Observer: Beckett Altitude 136 m

Site Location - Lat. $4^{o}31'$ Long. $46^{o}41'$ Map Sheet No. 66

GENERAL DESCRIPTION Flat, sandy, medium thick mixed bush. Poor herb and grass cover. Some abandoned cultivation in the vicinity.

SOIL - General Medium depth fine sand. Some surface limestone rocks.

Auger -

pH -

Colour 5 YR 5/6 yellowish red

Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Abandoned cultivations only.

OTHERS Nil

VEGETATION - Ground cover 45%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. horrida		
		A. reficiens		
		A. edgeworthii	All species abundant	
		B. minimifolia		
		E. cuneata		
		Grewia sp.		
		D. glabra		
		I. ruspolii		
		I. rotundifolia		
		Salsola bottae		
		E. longispina		
		B. orbicularis		
		D. glomerata		
		Hildebrantia sp.		
		S. busseanus		
		3 Commiphora spp.		
		B. coriacea		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 17/28	71/4/5	RSP
	29	71/4/6	RSP
	30	71/4/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 71/7

Date: 29/6/79 Observer: Beckett Altitude 130m.

Site Location - Lat. 4°08' Long. 46°53' Map Sheet No. 73

GENERAL DESCRIPTION Undulating sandy hills (fixed dunes) with some planted and abandoned cultivations. Medium thick bush. Medium grass and herb cover.

SOIL - General Deep very fine sand, reasonably well consolidated.

Auger - Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Large fixed dunes widespread

GRAZING ANIMALS Nil

CROPPING Abandoned and planted cultivation

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. reficiens	+	
	"Adorh"	S. jubae	+	
		A. nilotica	+	
		B. orbicularis		
		I. ruspoli		
		C. aff. flaviflora		
		Cassia sp.		
		A. senegal		
		Dalbergia sp.		
		A. mellifera		
		A. horrida		
		Barleria sp.		
		A. lanata		
		Veronia sp.		
		L. senegalensis		
		D. scindicum		
		A. sieberana		

- Growth stages Woody vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 17/13	81/7/5	RSP
	14	81/7/6	RSP
	15	81/7/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 71/8

Date: 29/6/79 Observer: Beckett Altitude 110 m.

Site Location - Lat. $4^{o}16'$ Long. $46^{o}50'$ Map Sheet No. 73

GENERAL DESCRIPTION Flat, sandy medium thick Acacia bush. Medium grass cover poor herb cover.

SOIL - General Deep, very fine sand, reasonably well consolidated.

Auger - Colour 7.5 YR 6/6 reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and Other Information
		A. horrida	+	
		A. nilotica		
		A. reficiens		
		D. glomerata	+	
		A. aff. senegal		
		A. nubica		
		B. tribulitasis		
		L. senegalensis		

- Growth stages Woody vegetation fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 17/16	71/8/5	RSP
	17	71/8/6	RSP
	18	71/8/6	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 71/10

Date: 28/6/79 Observer: Beckett Altitude 195 m.

Site location - Lat. 3°53' Long. 46°52' Map sheet No. 79

GENERAL DESCRIPTION Thick bush, poor grass and herb cover.

SOIL - General Very fine sand, well consolidated.

Auger - Colour 5 YR 4/6 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Abandoned cultivation in vicinity

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components:

Collection No.	Local Name	Identification	Abundance	Use and other Information
		D. glomerata	+	
		Cordia sp.		
		T. obbiadensis		
		B. fructicosum		
		A. horrida		
		A. reficiens		
		M. angolensis		
	"Urbei" - large leaved	J. tropaeolifolia		
		Hildebrantia sp.		
	small yellow flowers	Crototaria sp.		
		Capitanya sp.		
		Melhania sp.		
		Veronia sp.		
		L. senegalensis		
		Aristida sp.		
390	very tall	Aristida sp.		

- Growth stages Woody vegetation fruiting or post fruiting

Herbs flowering and seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 17/ 3	71/10/5	RSP
	4	71/10/6	RSP
	5	71/10/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE No. 72/13

Date: 28/6/79 Observer: Beckett Altitude 23 m.

Site location - Lat. 3°48' Long. 47°04' Map Sheet No. 80

GENERAL DESCRIPTION Flat, sandy, mostly thin bush, with locally thick patches occuring. Grass cover patchy, good to poor in places. Herb cover medium.

SOIL - General Deep fine silty sand. Well consolidated

Auger - Colour 7.5 YR 6/4 light brown

pH [illegible] Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		Gardenia fiorii		
		S. persica		
		3 Commiphora spp.	All species abundant	
		G. villosa		
		A. horrida		
	"kree-ri" small bush	Ficus sp.		
		D. glomerata		
		A. mellifera		
		A. reficiens		
		Hildebrantia sp.		
		Asparagus sp.		
	"Miri-as"	Grewia sp.		
383	Lanceolate leaves	Cadaba sp.		
	orange flowers	Barleria sp.		
		D. scindicum		
		L. senegalensis		
		H. contortus		
		Sporobolus sp.		

- Growth stages Woody vegetation flowering and fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 16/29	72/13/5	RSP
	30	72/13/6	RSP
	31	72/13/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 71/10

Date: 28/6/79 Observer: Beckett Altitude 195 m.

Site location - Lat. 3°53' Long. 46°52' Map sheet No. 79

GENERAL DESCRIPTION Thick bush, poor grass and herb cover.

SOIL - General Very fine sand, well consolidated.

Auger - Colour 5 YR 4/6 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Abandoned cultivation in vicinity

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components:

Collection No.	Local Name	Identification	Abundance	Use and other Information
		D. glomerata	+	
		Cordia sp.		
		T. obbiadensis		
		B. fructicosum		
		A. horrida		
		A. reficiens		
		M. angolensis		
	"Urbei" - large leaved	J. tropaeolifolia		
		Hildebrantia sp.		
	small yellow flowers	Crototaria sp.		
		Capitanya sp.		
		Melhania sp.		
		Veronia sp.		
		L. senegalensis		
		Aristida sp.		
390	very tall	Aristida sp.		

- Growth stages Woody vegetation fruiting or post fruiting

Herbs flowering and seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 17/ 3	71/10/5	RSP
	4	71/10/6	RSP
	5	71/10/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE No. 72/13

Date: 28/6/79 Observer: Beckett Altitude 23 m.

Site location - Lat. 3°48' Long. 47°04' Map Sheet No. 80

GENERAL DESCRIPTION Flat, sandy, mostly thin bush, with locally thick patches occuring. Grass cover patchy, good to poor in places. Herb cover medium.

SOIL - General Deep fine silty sand. Well consolidated

Auger - Colour 7.5 YR 6/4 light brown

pH [illegible] Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		Gardenia fiorii		
		S. persica		
		3 Commiphora spp.	All species abundant	
		G. villosa		
		A. horrida		
	"kree-ri" small bush	Ficus sp.		
		D. glomerata		
		A. mellifera		
		A. reficiens		
		Hildebrantia sp.		
		Asparagus sp.		
	"Miri-as"	Grewia sp.		
383	Lanceolate leaves	Cadaba sp.		
	orange flowers	Barleria sp.		
		D. scindicum		
		L. senegalensis		
		H. contortus		
		Sporobolus sp.		

- Growth stages Woody vegetation flowering and fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 16/29	72/13/5	RSP
	30	72/13/6	RSP
	31	72/13/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 72/14

Date: 28/6/79 Observer: Beckett Altitude 15 m.

Site Location - Lat. 3°48' Long. 47°14' Map Sheet No. 80

GENERAL DESCRIPTION Coastal plateau. Flat to very gently undulating. Treeless, good grass cover, medium herb cover.

SOIL - General Deep medium particled coralline sand.

Auger -

pH -

Colour 7.5 YR 7/6 reddish/yellow

Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Soemerings Gazelle

CROPPING Nil

OTHERS Nil

VEGETATION - Ground Cover 64%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
388	small leaves	Indigofera sp.		
386		Aneilema sp.		
		Heliotropium sp.	All species abundant	
		Pucilaria sp.		
387	Unidentified	Labiate		
360		Aristida sp.		
385		P. pinifolium		
		C. ciliaris		
	Cyperaceae	2 unidentified spp.		

- Growth stages Herbs and grass flowering and seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 16/26	72/14/5	RSP
	27	72/14/6	RSP
	28	72/14/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 73/2

Date: 27/6/79 Observer: Beckett Altitude 361 m.

Site location - Lat. 4°28' Long. 47°45' Map Sheet No. 67

GENERAL DESCRIPTION Undulating sandy hills (stabilised dunes). Thick, very mixed bush. Poor herb/grass cover.

SOIL - General Very fine deep sand

Auger - Colour 5 YR 5/6 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		S. busseanus		
		Cassia sp.		
		E. spectablis.	All species abundant	
		D. glomerata		
		3 Commiphora spp.		
	"Har-reri"	Terminalia sp.		
	"Adorh"	S. jubae .		
		Kleina sp.		
		A. nilotica		
	small leaved	Indigofera sp.		
		L. senegalensis		
		C. ciliaris		
		Enteropogon sp.		

- Growth stages Woody vegetation flowering and fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 16/20	73/2/5	RSP
	21	73/2/6	RSP
	22	73/2/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 73/3

Date: 27/6/79 Observer: Beckett Altitude 285 m

Site Location - Lat. 4°01' Long. 47°03' Map Sheet No. 74

GENERAL DESCRIPTION Flat, sandy, thick mixed bush. Medium herb cover, poor grass cover.

SOIL - General Very fine deep, well consolidated sand.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
	"Adorh"	S. jubae	all species abundant	
		A. edgeworthii		
		A. horrida		
		A. reficiens		
		A. nilotica		
		D. glomerata		
		E. aff.cuneata		
		T. obbiadensis		
		Cordia sp.		
		D. commiphoroides		
	"Hav-reri"	Terminalia sp.		
		Veronia sp.		
		Crotolaria sp.		
		L. senegalensis		
		'H.' contortus		
		C. ciliaris		

- Growth stages Woody vegetation flowering and fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	No photographs		

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 73/6

Date: 28/6/79 Observer: Beckett Altitude 198 m.

Site location - Lat. 3°53' Long. 46°55' Map Sheet No. 79

GENERAL DESCRIPTION Flat, sandy, medium to thick bush. Poor grass cover, medium to poor herb cover. Some quite extensive bare patches.

SOIL - General Deep very fine sand. Well consolidated

Auger - Colour 5 YR 4/6 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components:

Collection Number	Local Names	Identification	Abundance	Use and other Information
		D. glomerata		
		S. jubae	All species abundant	
		A. aff. horrida		
		A. nubica		
		A. aff. senegal		
		Grewia sp.		
		B. coriacea		
		Cordia sp.		
		H. aquifolium		
		A. mellifera		
		Cassia sp.		
		Veronia sp.		
		Hibiscus sp.		
		C. ciliaris		
		L. senegalensis		

- Growth stages Woody vegetation flowering
Herbs flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 16/35	73/6/1	RSP
	J 17 0	73/6/2	RSP
	1	73/6/3	RSP
	2	73/6/4	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 74/4

Date: 4/7/79 Observer: Beckett Altitude 294 m.

Site Location - Lat. 4°05' Long. 45°55' Map Sheet No.71

GENERAL DESCRIPTION Flat, sandy, thick mixed bush. Grass cover poor herb cover medium .

SOIL - General Deep coarse quartz sand.

Auger - Colour Not on Munsell Chart red/orange

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIAMLS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		C. edulis		
341		3 Commiphora spp		
		Boswellia sp.		
		J. dichtar		
		E. longispina		
		E. cuneata		
		S. busseanus		
		Cyclocheilon sp.		
		I. citrina		
		I. flavescens		
340		Ipomea sp.		
		2 Melhania spp.		
		Hibiscus sp.		
		Pavonia sp.		
		C. cinerascens		
		C. ciliaris		
		L. senegalensis		
		Enteropogon sp.		
		unidentified sedge		

- Growth Stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 18/14	74/@/5	RSP
	15	74/4/6	RSP
	16	74/4/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE No. 74/5

Date: 4/7/79 Observer: Beckett Altitude 298 m.

Site Location Lat. 4°11' Long. 45°51' Map Sheet No. 71

GENERAL DESCRIPTION Flat, sandy, thick mixed bush. Poor grass cover, medium herb cover.

SOIL - General Deep coarse sand. Well consolidated. Some lateritic outcrops.

Auger - Colour Red/orange

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		Boswellia sp.	+	
		C. somalensis	+	
		C. edulis	+	
		Cassia sp.		
		I. ruspolii		
		J. dichtar		
		2 Commiphora spp.		
		E. longispina		
		Iphiona rotundifolia		
		Capitanya sp.		
		Lannea sp.		
		C. cinerascens		
		L. senegalensis		
		Aristida sp.		
		Enteropogon sp.		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 18/17	74/5/5	RSP
	18	74/5/6	RSP
	19	74/5/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 75/3

Date: 8/7/79 Observer: Beckett Altitude 192 m.

Site Location - Lat. $4^{o}12'$ Long. $45^{o}38'$ Map Sheet No. 71

GENERAL DESCRIPTION Flat alluvial and near Wadi. Thin Acacia bush. Poor grass cover except for annuals. Heavily trampled.

SOIL - General Deep silty sand.

Auger - Colour 5 YR 5/8 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Wells near site

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Cattle

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 35½

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. tortilis		
		A. nubica		
		Balanitia sp.		
		J. villosa		
		Cordia sp.		
		Pleuropterantha revoilii		
		Barleria sp.		
	Bush to 4 ft.	Heliotropium sp.		
		A. lenata		
		Pavonia sp.		
		I. spinosa		
		L. senegalensis		
	Annual	Aristida sp.		
	Annual	Tetrapogon sp.		

- Growth Stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 21/ 0	75/3/5	RSP
	1	75/3/6	RSP
	2	75/3/6	RSP
	3	75/3/8	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 75/4

Date: 4/7/79 Observer: Beckett Altitude 235 m.

Site Location - Lat. 4°02' Long. 45°43' Map Sheet No. 71

GENERAL DESCRIPTION Flat, valley basin. Medium thick bush. Poor grass/herb cover.

SOIL - General Deep, medium to fine particled sand. Well consolidated with some silt.

Auger -

pH -

Colour 5 YR 4/6 yellowish red

Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 52%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		D. elata		
		J. dichtar		
		A. tortilis		
		Cordia sp.		
		I. donaldsonii	+	
		Lannea sp.		
		2 Commiphora spp.		
		C. glandulosa		
		E. cuneata		
		S. busseanus		
		B. minimifolia		
		I. ruspolii	+	
		A. lenata		
		C. cinerascens		
		B. edulis		
		S. hirtigluma		
		L. senegalensis		
		Aristida sp.		
		Annual Aristida sp.		

- Growth Stages All vegetation fruiting or post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 18/29	75/4/1	RSP
	30	75/4/2	RSP
	31	75/4/3	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 75/5

Date: 5/7/79 Observer: Beckett Altitude 168 m.

Site Location - Lat. 3°53' Long. 45°41' Map Sheet No.77

GENERAL DESCRIPTION Flat broken limestone area with small drainage channels. Medium thick mixed bush, poor herb/grass cover.

SOIL - General Shallow sand over limestone with rock strewn surface.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 39%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		D. elata		
	yellow flowers	Dicrostachys sp.	All species abundant	
		Cordyla somalensis		
		A. trisulcus		
		S. busseanus		
		2 Commiphora spp.		
		B. coriacea		
		A. horrida		
		A. tortilis		
		T. flavescens		
		I rotundifolia		
		C. quadrilaris		
		I. ruspolii		
		Hibiscus sp.		
		Capitanya sp.		
		A. lanata		
		C. cinerascens		
		S. hirtigluma		
		Enteropogon sp.		
		L. senegalensis		

- Growth stages Woody vegetation flowering and fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 18/36	75/5/5	RSP
	J 19 0	75/5/6	RSP
	1	75/5/7	RSP
	2	75/5/8	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 75/6

Date: 5/7/79 Observer: Beckett Altitude 205 m

Site Location Lat. 3°52' Long. 45°43' Map Sheet No.77

GENERAL DESCRIPTION Flat, sandy, surface uneven, thin mixed bush. Poor grass cover, good herb cover. Heavily grazed.

SOIL - General Deep very fine sand with much silt. Well consolidated

Auger - Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Goats

CROPPING Planted and abandoned fields

OTHERS Nil

VEGETATION - Ground cover 53%

- Components;

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. tortilis		
		Z. hamur		
		Cassia sp.		
		3 Commiphora spp		
		Boswellia sp.		
	yellow flowers	Dicrostacchys sp.		
		A. trisulcus		
		D. elata		
		A. edgeworthii		
		Cordyla somalensis		
		C. erianthera		
		I. rotundifolia		
	small leaved	Indigofera sp.		
		Pavonia sp.		
		A. lanata		
		Hibiscus sp.		
		Annual Aristida sp.		
		L. senegalensis		
		S. hirtigluma		
		Aristida sp.		
		A. sierberana		

- Growth stages Woody vegetation fruiting and post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 18/32	75/6/5	RSP
	33	75/6/6	RSP
	34	75/6/7	RSP
	35	75/6/8	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 76/2

Date: 8/7/79 Observer: Beckett Altitude 260 m.

Site Location - Lat. 4°22' Long. 45°26' Map Sheet No. 63

GENERAL DESCRIPTION Rocky limestone area of small hills and associated wadis. Medium to thick mixed bush. Poor grass and herb cover.

SOIL - General Very shallow, fine sandy silt. Much limestone exposed.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components

Collection Number	Local Names	Identification	Abundance	Use and other Information
		2 Grewia spp.	All species abundant	
		2 Commiphora spp.		
		C. albidus		
		B. minimifolia		
		A. anthelmintica		
		A. horrida		
	single hooked thorn	Acacia unispinosa		
		A. senegal		
		E. cuneata		
		S. incana		
		C. cinerascens		
		D. scindicum		
		A. kelleri		
		C. aucheri		
		E. cenchroides		

- Growth stages All vegetation fruiting or post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 20/31	76/2/5	RSP
	32	76/2/6	RSP
	33	76/2/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 76/4

Date: 8/7/79 Observer: Beckett Altitude 230 m.

Site Location - Lat. $4^{o}06'$ Long. $45^{o}34'$ Map Sheet No. 71

GENERAL DESCRIPTION Rocky limestone area of small hills and associated valleys. Medium to thick Acacia bush, poor grass and herb cover.

SOIL - General Very shallow fine silty sand.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. horrida		
		A. reficiens		
		B. minimifolia		
		Cordia sp.		
		T. obbiadensis	All species abundant	
		2 Commiphora spp.		
		C. albidus		
		3 Grewia spp.		
		D. glabra		
	yellow flowers	Dicrostachys sp.		
		I. spinosa		
	yellow flowers	Barleria sp.		
		I. rotundifolia		
		D. scindicum		
		A. kelleri		
		E. cenchroides		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 21/5	76/4/1	RSP
	6	76/4/2	RSP
	7	76/4/3	RSP
	8	76/4/4	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 76/5

Date: 8/7/79 Observer: Beckett Altitude 190 m

Site Location - Lat. 4°00' Long. 45°35' Map Sheet No. 71

GENERAL DESCRIPTION Medium thick Acacia/Commiphora bush. Poor grass and herb cover.

SOIL - General Shallow very fine silty sand. Very rocky with many limestone fragments

Auger - Colour 7.5 YR 5/6 strong brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover

- Components:

Collection Number	Local Names	Identification	Abundance	Use and other Information
		A. tortilis	+	
		2 Commiphora spp.	+	
		Cordia sp.		
		A. horrida		
	"Adorh"	S. jubae		
		B. minimifolia		
		C. albidus		
	yellow flowers	Dicrostachys sp.		
		3 Grewia spp.		
		E. cuneata		
		Z. hamur		
		T. flavescens		
		I. spinosa		
		S. incana		
		Veronia sp.		
		Pavonia sp.		
		A. kelleri		
		L. senegalensis		
		D. scindicum		
		E. cenchroides		

- Growth Stages Woody vegetation fruiting and post fruiting

PHOTO GRAPHS	Serial Number	Reference Number	Contents
	J 21/ 9	76/5/3	RSP
	10	76/5/4	RSP
	11	76/5/5	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 76/6

Date: 8/7/79 Observer: Beckett Altitude 230 m.

Site Location - Lat. 4°16' Long. 45°31' Map Sheet No. 71

GENERAL DESCRIPTION Rocky limestone hills and associated wadis. Medium to thick mixed bush. Poor grass and herb cover except for annual grasses.

SOIL - General Very shallow sandy silt

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
	single hooked thorn	Acacia unispinosa		
		A. senegal	All Species abundant	
		C. albidus		
		3 Commiphora spp.		
		2 Grewia spp.		
		A. horrida		
		B. minimifolia		
		T. obbiadensis		
		Lannea sp.		
		E. bifida		
		I. spinosa		
		T. flavescens		
		Barleria sp.		
		Pavonia sp.		
		D. scindicum		
		A. kelleri		
		E. cenchroides		
		Annual Aristida sp.		
		Annual Tetrapogon sp.		

- Growth stages All vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 20/34	76/6 '5	RSP
	35	76/6 '6	RSP
	36	76/6 '7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 77/6

Date: 8/7/79 Observer: Beckett Altitude 130 m.

Site Location - Lat. 3°28' Long. 45°28' Map Sheet No. 82

GENERAL DESCRIPTION Flat gypseous plain. Suaeda sp. dominant.

SOIL - General Fine sand with calcareous nodules. Some anhydrite outcrops.

Auger - Colour 7.5 YR 5/6 strong brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 49%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
	"Harum"	Suaeda micromeris	+	
		E. bifida		
		2 Commiphora spp.		
		C. flaviflora		
		S. persia		
	small leaved	Jatropha sp.		
	single hooked thorn	Acacia unispinosa		
		Cordia sp.		
		D. glabra		
		A. trisulcus		
		E. cuneata		
		U. setulosa		
		D. scindicum		

- Growth stages All vegetation flowering or fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 21/20	77/2/5	RSP
	21	77/2/6	RSP
	22	77/2/7	RSP
	23	77/2/8	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 78/4

Date: 5/7/79 Observer: Beckett Altitude 182 m

Site Location - Lat. 4°01' Long. 45°17' Map Sheet No.70

GENERAL DESCRIPTION Flat plain with arced vegetation. Thick mixed bush alternating with open grassed or grassless areas. Generally poor herb and grass cover.

SOIL - General Very fine silt and clay with small limestone chips.

Auger - Colour 7.5 YR 5/6 strong brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Not estimated

- components:

Collection Number	Local name	Identification	Abundance	Use and other Information
		A. horrida		
		B. minimifolia	All species abundant	
		E. cuneata		
		2 Commiphora spp.		
		Gossypium sp.		
	"Guri-Haris"	Heliotropium sp.		
		Cordia sp.		
		Grewia sp.		
	Unidentified	Compositae		
		T. flavescens		
		C. cinerascens		
		L. senegalensis		
		Andropogon sp.		
		E. cenchroides		
		D. scindicum		
		C. ciliaris		

- Growth stages Woody vegetation post fruiting
Herbs and grass seeding

PHOTOGRAPHS

Serial Number	Reference Number	Contents
J 19/19	78/4/5	RSP
20	78/4/6	RSP
21	78/4/7	RSP
22	78/4/8	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 78/5

Date: 5/7/79 Observer: Beckett Altitude 190 m

Site Location - Lat. 4°03' Long. 45°14' Map Sheet No. 70

GENERAL DESCRIPTION Flat plain with arced vegetation. Thick mixed bush alternating with open grassed or grassless areas.

SOIL - General Fine clay and silt with small limestone particles

Auger - Colour 5 YR 5/8 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Not estimated

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		Cordia sp.	+	
		A. tortilis		
		B. fructicosum		
		Ipomea sp.		
		2 Grewia spp.		
		C. albidus		
		Lannea sp.		
		A. lanata		
		Cheacantia sp.		
		T. flavescens		
		Hibiscus sp.		
		D. scindicum		
		Sporobolus sp.		

- Growth stages All vegetation fruiting or seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 19/16	78/5/5	RSP
	17	78/5/6	RSP
	18	78/5/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 79/3

Date: 6/7/79 Observer: Beckett Altitude 170 m.

Site Location - Lat. 4°13' Long. 45°23' Map Sheet No. 70

GENERAL DESCRIPTION Small limestone strewn hill. Medium thick mixed bush. Very poor herb and grass cover.

SOIL - General Very shallow, extremely rocky.

Auger -

pH -

Colour -

Other Comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 38%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		C. albidus		
		2 Commiphora spp		
		Gossypium sp.		
		2 Grewia spp.	All species abundant	
		A. horrida		
		B. minimifolia		
		C. glandulosa		
		I. rotundifolia		
		A. reficiens		
		Cordia sp.		
		E. cuneata		
		B. fructicosum		
		C. cinerascens		
	yellow flowers	Barleria sp.		
		A. kelleri		
		S. hirtigluma		
		E. cenchroides		

- Growth stages Woody vegetation fruiting and post fruiting grass seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J. 19/31	79/3/5	RSP
	32	79/3/6	RSP
	33	79/3/7	RSP
	34	79/3/8	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 79/2

Date: 5/7/79 Observer: Beckett Altitude 180 m.

Site Location - Lat. 4°00' Long. 45°21' Map Sheet No. 770

GENERAL DESCRIPTION Flat, medium thick bush. Surface strewn with limestone rocks.

SOIL - General Very fine (powdery) silt and sand on limestone.

Auger - Colour 7.5 YR 5/6 strong brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 39%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		M. angolensis		
		B. minimifolia		
		Grewia sp.	All species abundant	
		2 Commiphora spp.		
		C. albidus		
	single hooked thorn	Acacia unispinosa		
		E. cuneata		
		A. aff. horrida		
		B. fructicosum		
		C. glandulosa		
		A. senegal		
		I. rotundifolia		
		C. cinerascens		
		L. senegalensis		
		C. ciliaris		
		S. hirtigluma		
	Annual	Aristida sp.		

- Growth stages Woody vegetation fruiting
Grass seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 19/13	79/2/5	Tall Maurua angolensis on site
	14	79/2/6	R.S.P.
	15	79/2/7	R.S.P.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 79/6

Date: 5/7/79 Observer: Beckett Altitude 180m

Site Location - Lat. 3°56' Long. 45°25' Map Sheet No. 76

GENERAL DESCRIPTION Flat, limestone area [illegible] surface strewn with small rocks. Thin Acacia bush, medium grass cover and poor herb cover.

SOIL - General Very shallow, very fine (powdery) silt and sand.

Auger - Colour 7.5 YR 6/6

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 51%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
	"fulai"3 thorns	Acacia sp.		
		A. aff. senegal		
		A. reficiens		
		Terminalia sp.		
		B. minimifolia		
		Grewia sp.		
		Cordia sp.		
		E. cuneata		
		2 Commiphora spp.		
	small pyramidal	Euphorbia sp.		
		C. albidus		
		T. obbiadensis		
	yellow flowers	Barleria sp.		
	[illegible]	C. cinerascens		
		A. kelleri		
		C. ciliaris		
		D. scindicum		
		Sporobolus sp.		

- Growth stages Woody vegetation post fruiting grass seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 19 10	79/6/5	Large Terminalia tree at site
	11	79/6/7	R.S.P.
	12	79/6/6	R.S.P

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 80/1

Date: 4/7/79 Observer: Beckett Altitude 198 m.

Site Location - Lat. 4°21' Long. 46°02' Map Sheet No. 65

GENERAL DESCRIPTION Flat, sandy thin mixed bush. Medium grass cover, poor herb cover.

SOIL - General Medium depth, medium to coarse particled quartz sand.

Auger -

pH -

Colour 2.5 YR 4/8 red

Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 39%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. aff.senegal	All species abundant	
		Boswellia sp.		
		A. tortilis		
		A. horrida		
		A. edgeworthii		
		S. busseanus		
		2 Commiphora spp.		
	small tree	A. aff. edgeworthii		
		A. trisulcus		
	small leaved	Indigofera sp.		
		I. rotundifolia		
		I. ruspolii		
		S. hirtigluma		
		Enteropogon sp.		

- Growth stages Woody vegetation fruiting or post fruiting

PHOTOGRAPHS

Serial Number	Reference Number	Contents
J 18/26	80/1/5	RSP
27	80/1/6	RSP
28	80/1/7	RSP

APPENDIX 1.01 SAMPLING DESCRIPTIONS SITE NO. 80/4

Date: 4/7/79 Observer: Beckett Altitude 160 m

Site Location - Lat. 4°03' Long. 46°08' Map Sheet No. 72

GENERAL DESCRIPTION Flat, sandy very open bush to grassland. Medium to poor grass cover, good herb cover.

SOIL - General Deep, coarse quartz sand.

Auger - Colour 5 YR 4/8

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground Cover 53%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. reficiens		
		D. glomerata		
		B. minimifolia	All species abundant	
	"Adorh"	S. jubae		
		C. flaviflora		
		Cassia sp.		
		Cordyla somalensis		
		A. edgeworthii		
		E. longispina		
		A. tortilis		
		Tiliaceous : herbs		
		Hibiscus sp.		
		L. senegalensis		
		Aristida sp.		
		S. hirtigluma		
		C. ciliaris		

- Growth stages Woody vegetation post fruiting
Herb and grass seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 18/11	80/4/6	RSP
	12	80/4/5	RSP
	13	80/4/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 80/6

Date: 28/6/79 Observer: Beckett Altitude 131 m.

Site Location - Lat. 4°08' Long. 46°28' Map Sheet No. 72

GENERAL DESCRIPTION Flat shallow sand on white limestone. Very stoney surface. Thick mixed bush, medium grass and herb cover.

SOIL - General Fine shallow sand, on limestone

Auger - Colour 7.5 YR reddish yellow

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Tall variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		E. cuneata		
		B. hildebrantia		
391		3 Commiphora spp.		
		Terminalia sp.	All species abundant	
		A. tortilis		
		C. flaviflora		
	"Dohol"	Cordia sp.		
		B. coriacea		
		G. fiorii		
		Grewia sp.		
		A. aff. horrida		
		Heliotropium sp.		
		I. ruspolii		
		Abutilon sp.		
		T. flavescens		
		C. quadrilaris		
		D. scindicum		
		L. senegalensis		

- Growth Stages Woody vegetation fruiting or post fruiting
Herbs flowering and fruiting
Grass seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 17/ 6	86/6/1	RSP
	7	80/6/2	RSP
	8	80/6/3	RSP
	9	80/6/4	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 80/9

Date: 29/6/79 Observer: Beckett Altitude 134 m

Site Location - Lat. $4^{o}21'$ Long. $46^{o}37'$ Map Sheet No. 66

GENERAL DESCRIPTION Flat, sandy with limestone outcrops. Area heavily cultivated and many abandoned grassed over cultivates.

SOIL - General Fine to very fine particled sand with silt. Very shallow in places with limestone protrusions.

Auger - Colour 5 YR 5/8 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Sorghum fields, and abandoned cultivations

OTHERS Nil

VEGETATION - Ground Cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		B. minimifolia		
		D. glomerata		
		A. horrida		
		S. busseanus		
		C. flaviflora		
		2 Commiphora spp.		
		J. dichtar		
		E. cuneata		
		Cassia sp.		
		Grewia sp.		
		I. ruspolii		
		C. cinerascens		
		A. lantana		
		I. rotundifolia		
		Crotolaria sp.		
		Heliotropium sp.		
		Enteropogon sp.		
		Aristida		
		T. spathaceus		
		C. ciliaris		

- Growth stages Woody vegetation post fruiting
Herbs fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 17/25	80/9/1	RSP
	26	80/9/2	RSP
	27	80/9/3	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 81/3

Date: 2/6/79 Observer: Beckett Altitude 148 m.

Site Location - Lat. 3°43' Long. 46°14' Map Sheet No.78

GENERAL DESCRIPTION Flat, sandy, thin bush, good herb and grass cover. Some limestone outcrops.

SOIL - General Shallow to medium depth sand. Very fine particled with some silt. Well consolidated.

Auger - Colour 7.5 YR 5/6 strong brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional, low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 50%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		D. glomerata		
	small leaved	Jatropha sp.		
		D. elata		
		C. erianthera		
		A. tortilis		
		J. villosa		
		Cassia sp.		
		2 Commiphora spp.		
	"Adorh"	S. jubae		
		B. orbicularis		
		Grewia sp.		
		A. edgeworthii		
		C. cinerascens		
		T. flavescens		
		B. edulis		
		A. lanata		
		Psilotrichum sp.		
		Heliotropium sp.		
		Pleuropterantha revoilii		
		S. hirtigluma		
		Aristida sp.		

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J.18/ 5	80/9/1	RSP
	6	80/9/2	RSP
	7	80/9/3	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 81/5

Date: 4/7/79 Observer: Beckett Altitude 120 m

Site Location - Lat. 3°45' Long. 46°31' Map Sheet No. 79

GENERAL DESCRIPTION Flat to gently undulating, sandy, generally low shrubs and bushes. Area has been under previous cultivation.

SOIL - General Deep fine sand. Well consolidated.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels and Cattle

CROPPING Sorgum,millett, and abandoned cultivations

OTHERS Nil

VEGETATION - Ground cover 51%

- Components

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. nubica		
		A. reficiens		
		E. cuneata	All species abundant	
		Grewia sp.		
		S. busseanus		
		D. glomerata		
	"Adorh"	S. jubae		
		Cassia sp.		
		T. flavascens		
		I.ruspolii		
	small yellow flower	Crotolaria sp.		
		Veronia sp.		
		Psilotrichum sp.		
		C. cinerascens		
		L. senegalensis		
		C. ciliaris		
		Enteropogon sp.		
		Aristida sp.		

- Growth stages Herbs and grass seeding
Woody vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 18/ 8	81/5/5	RSP
	9	81/5/6	RSP
	10	81/5/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE No. 82/3

Date: 29/6/79 Observer: Beckett Altitude 139 m.

Site Location - Lat. 4°24' Long. 46°38' Map Sheet No. 66

GENERAL DESCRIPTION Flat, very rocky limestone area. Medium to thick Acacia/Commiphora bush. Poor grass and herb cover.

SOIL - General Very fine shallow sand on limestone.

Auger -

pH -

Colour -

Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Tall variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. horrida	+	
		3 Commiphora spp.	+	
		E. cuneata		
		A. reficiens		
		Boswellia sp.		
		B. minimifolia		
		Grewia sp.		
		Lannea sp.		
		Aristida sp.		
		Gossypium somalensis		
		I. ruspolii		
		A. lanata		
		Pavonia sp.		
		Hibiscus sp.		
		Heliotropium sp.		
		B. edulis		
		A. kelleri		
		D. scindicum		
		L. senegalensis		

- Growth stages Woody vegetation post seeding
Herbs and grass seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 17/22	82/3/5	RSP
	23	82/3/6	RSP
	24	82/3/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 82/4

Date: 29/6/79 Observer: Beckett Altitude 109 m

Site location - Lat. 4°08' Long. 46°45' Map Sheet No. 73

GENERAL DESCRIPTION Flat, sandy, open bush. Good herb and grass cover.

SOIL - General Fine silty sand over white limestone. Medium depth and well consolidated.

Auger - Colour 5 YR 5/8 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Tall variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 61%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. reficiens	+	
		T. obbiadensis	+	
		E. cuneata		
		B. coriacea		
		I. ruspolii		
		D. glomerata		
		Grewia sp.		
	"Adorh"	S. jubae		
		S. busseanus		
		A. nubica		
		B. orbicularis		
		Commiphora sp.		
		Fagaria sp.		
		Barleria sp.		
		Veronia sp.		
		Hibiscus sp.		
		Heliotropium sp.		
		C. ciliaris		
		L. senegalensis		
		Aristida sp.		

- Growth stages Woody vegetation fruiting and post fruiting
Herbs flowering
grass seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 17/10	82/4/5	RSP
	11	82/4/6	RSP
	12	82/4/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 83/2

Date: 8/7/79 Observer: Beckett Altitude 140m

Site Location - Lat. 3°47' Long. 45°33' Map Sheet No. 77

GENERAL DESCRIPTION Flat alluvial plain. Good grass cover, medium herb cover. Scattered Acacia trees.

SOIL - General Alluvial sandy silt.

Auger - Colour 7.5 YR 5/6 strong brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels

CROPPING Area has probably been cropped in the past

OTHERS Nil

VEGETATION - Ground Cover 68%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. nubica	+	
		Cordia sp.		
		A. reficiens		
		C. aff. flaviflora		
	small leaved	Jatropha sp.		
		A. trisulcus		
		E. cuneata		
		A. stuhlmannii		
		C. quadrilaris		
357	small leaved	Indigofera sp.		
		A. lancta		
		Veronia sp.		
		Pavonia sp.		
		Heliotropium sp.		
		Crotolaria sp		
		D. scindicum	+	

- Growth stages

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 21/12	83/2/5	RSP
	13	83/2/6	RSP
	14	83/2/7	RSP
	15	83/2/8	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 83/3

Date: 8/7/79 Observer Beckett Altitude 134 m.

Site Location - Lat. 3°41' Long. 45°34' Map sheet No. 77

General Description , Flat alluvial plain, open, scattered bushes and shrubs. Good grass cover, medium herb cover.

SOIL - General Deep alluvial sandy silt.

Auger - Colour 7.5 YR 5/6 strong brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION nil

DUNES Nil

GRAZING ANIMALS Cattle

CROPPING Sorghum

OTHERS Nil

VEGETATION - Ground cover 52%

Components;

Collection Number	Local names	Identification	Abundance	Use and othrr information
		A. trisulcus	+	
		A. horrida	+	
		Grewia sp.		
		B. minimifolia		
	small leaved	Jatropha sp.		
		C. aff. flaviflora		
		Cordia sp.		
	small leaved	Indigofera sp.		
	yellow flowered	Barleria sp.		
		Heliotropium sp.		
		Crotolaria sp.		
		Veronia sp.		
		Pavonia sp.		
		D. scindicum		
		C. ciliaris		

- Growth stages Woody vegetation flowering and fruiting

Grasses and herbs flowering and seeding

PHOTOGRAPHS	Serial NUmber	Reference Number	Contents
	J 21/16- 19	83/3/5-8	RSP

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APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 84/1

Date: 5/7/78 Observer: Beckett Altitude 145m

Site Location - Lat. 3°47' Long 45°38' Map Sheet No. 77

GENERAL DESCRIPTION Flat, sandy, medium thick bush. Poor grass cover. Medium herb cover.

SOIL - General Deep medium particled sand.

Auger -

pH -

Colour 5 YR 5/8 yellowish red

Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Abandoned cultivations

OTHERS Nil

VEGETATION - Ground cover 56%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		Delonix elata		
		B. fructicosum	All species abundant	
		A. somalensis		
		D. glomerata		
		C. erianthera		
		I.ruspolii		
		2 Commiphora spp		
		A. edgeworthii		
		C. somalensis		
	"Adorh"	S. jubae		
		E. longispina		
		E. cuneata		
		C. albidus		
		T. flavescens		
		S. busseanus		
		Capitanya sp.		
		A. lanata		
		Barleria sp.		
		Aristida sp.		
		S. hirtigluma		
		Enteropogon sp.		

- Growth stages Woody vegetation fruiting and flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 19/ 3	84/1/5	RSP
	4	84/1/6	RSP
	5	84/1/7	RSP
	6	84/1/8	RSP

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APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 84/2

Date: 5/7/79 Observer: Beckett Altitude 141 m

Site Location - Lat. 3°43' Long. 45°40' Map Sheet No. 77

GENERAL DESCRIPTION Flat alluvial plain, near Wadi Shabeelle open country, good grass cover, medium herb cover. Heavily grazed.

SOIL - General Deep alluvial clay and silt

Auger - Colour 10 YR 5/3 brown

pH - Other comments

SURFACE WATER AND WELLS Wadi Shabeelle

TERMITARIA low variety

DUNES Mobiles dune nearby at village of Shiin

GRAZING ANIMALS Goats and sheep

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 62%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. trisulcus		
	Small leaved	Indigofera sp.	All species abundant	
345	Bush to 4 ft.	Heliotropium sp.		
		I. rotundifolia		
		Pleuropterantha revoilii		
		Hibiscus sp.		
	small shrub	Heliotropium sp.		
		A. lanata		
		D. scindicum		

- Growth stages Vegetation flowering and fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 19/ 7	84/2/5	RSP
	8	84/2/6	RSP
	9	84/2/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 84/3

Date: 2/6/79 Observer: Beckett Altitude 213 m.

Site Location - Lat. 3°28' Long. 45°56' Map Sheet No. 83

GENERAL DESCRIPTION Rolling sandy hills covered with thick mixed bush. Herb cover poor. Grass cover medium to poor.

SOIL - General Deep medium particled sand, loosely consolidated.

Auger - Colour -

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		Dalbergia sp.		
		G. villosa	All species abundant	
		Grewia sp.		
		3 Commiphora spp.		
	small leaved	Cordia sp.		
		A. edgeworthii		
		T. obbiadensis		
		T. flavescens		
	yellow flowers	D. glomerata		
		J. villosa		
		J. dichtar		
		A. trisulcus		
		Rhynchosia sp.		
		E. longispina		
		A. mellifera		
336	"Bal-la-lack"	Loewia sp.		
		Crotolaria sp.		
335	"Gahir"	Unidentified Acanthaceae		
		Enteropogon sp.		
		Aristida sp.		
		unidentified sedges		

- Growth stages Woody vegetation fruiting and flowering
Herbs flowering
Grass seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 17/34	84/3/5	RSP
	35	84/3/6	RSP
	36	84/3/6	RSP
	J 18/ 0	84/3/7	RSP
	1	84/3/8	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 84/4

Date: 2/6/79 Observer: Beckett Altitude 205 m

Site Location - Lat. 3°28' Long. 45°51' Map Sheet No. 83

GENERAL DESCRIPTION Undulating, sandy, thick mixed bush. Poor herb and grass cover.

SOIL - General Very deep medium particled sand. Loosely consolidated

Auger -

pH - Colour 5 YR 5/8 yellowish red

Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Occasional, low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
	"Bal-la-lack"	Loewia sp.		
		J. dichtar	All species abundant	
		A. edgeworthii		
		G. villosa		
		Grewia sp.		
		Phyllanthus sp.		
		T. obbiadensis		
		T. flavascens		
		A. trisulcus		
		A. mellifera		
	yellow flowers	D. glomerata		
		Rhynchosia sp.		
		Enteropogon sp.		
		Aristida sp.		

- Growth stages Woody vegetation fruiting and flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 18 / 2	84/4/5	RSP
	3	84/4/6	RSP
	4	84/4/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 85/1

Date: 25/6/79 Observer: Beckett Altitude 192 m.

Site Location - Lat. 5°03' 3 Long. 46°34' Map Sheet No. 51

GENERAL DESCRIPTION Flat, sandy, medium thick mixed bush. Some small banks of sand around shrubs and bushes.

SOIL - General Deep medium particled sand.

Auger -

pH -

Colour 5 YR 5/8 yellowish/red

Other comments

SURFACE WATER AND WELLS	Nil
TERMITARIA	Nil
EROSION	Nil
DUNES	Nil
GRAZING ANIMALS	Nil
GROPPING	Nil
OTHERS	Nil
VEGETATION - Ground Cover	40%

- Components:

Collection No.	Local Name	Identification	Abundance	Use and other Information
		C. erianthera		
		Hildebrantia sp.	All species abundant	
	Bush	Cissus sp.		
		A. edgeworthii		
		I. rotundifolia		
		C. ancistrophora		
		2 Commiphora spp.		
		E. cuneata		
		D. glabra		
		E. longispina		
		A. horrida		
	yellow flowered	Dicrostachys sp.		
		A. aff. senegal		
		S. busseanus		
	"adorh"	S. jubae		
		Cassia sp.		
		C. cinerascens		
		Pavonia sp.		
		C. ciliaris		
		L. senegalensis		
		Aristida sp.		

- Growth stages Woody vegetation fruiting or post fruiting
Grass seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 15/25	85/1/9	View along trace
	26	85/1/10	View along trace

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 85/2

Date: 26/6/79 Observer: Beckett Altitude 185 m.

Site location - Lat. 5°04' Long. 46°42' Map Sheet No. 51

GENERAL DESCRIPTION Flat, sandy, thin bush. A. reficiens locally dominant; good grass and herb cover.

SOIL - General Deep medium/fine particled sand.

Auger - Colour 5 YR 5/8 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 65%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		A. reficiens		
		E. cuneata	All species abundant	
		Cyclocheilon sp.		
		3 Commiphora spp.		
		B. minimifolia		
		I. ruspolii		
		Cassia sp.		
		C. cinerascens		
		Triumphetta sp.		
		P. revoilii		
		C. ciliaris		
		Aristida sp.		
		L. senegalensis		

- Growth stages Woody vegetation fruiting stage
Grass and herbsflowering and seeding

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 15/27	85/2/9	RSP
	28	85/2/10	RSP
	29	85/2/11	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 85/3

Date 26/6/79 Observer: Beckett Altitude 175 m.

Site Location Lat. 5°04' Long. 46°51' Map Sheet No. 51

GENERAL DESCRIPTION Gentle undulating and sandy, with occasional small rocky limestone ridges. Thin bush, poor grass cover, medium herb cover.

SOIL - General Medium/course particled sand.

Auger - Colour 2.5 YR 4/8 red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA low variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 48%

- Components

Collection Number	Local Name	Identification	Abundance	Use and Other Information
		A. edgeworthii	+	
		D. glomerata	+	
		A. reficiens		
		S. busseanus		
		I. ruspolii		
		E. cuneata		
		C. ancistrophora		
		B. minimifolia		
		J. villosa		
		I. rotundifolia		
		D. glabra		
		Barleria sp.		
		Melhania sp.		
		Merremia sp.		
		Pavonia sp.		
		Hibiscus sp.		
		C. ciliaris		
		Enteropogon sp.		
		L. senegalensis		
		Aristida sp.		

- Growth stages Grass flowering
Woody vegetation flowering and fruiting
Herbs flowering and fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 15/30	85/3/9	RSP
	31	85/3/10	RSP
	32	85/3/11	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 85/8

Date: 26/6/79 Observer: Beckett Altitude 142 m.

Site Location Lat. 5°01' Long. 47°06' Map Sheet No. 52

GENERAL DESCRIPTION Flat, medium thick bush, dominated by C. erianthera. Poor grass and herb cover.

SOIL - General Shallow fine sand with small calcareous nodules, over pinkish limestone.

Auger -

pH -

Colour 5 YR 4/6 yellowish red

Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground Cover Greater than 60%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		C. erianthera		
		3 Commiphoora spp.		
		D. glabra		
		E. longispina		
		S. busseanus		
		E. cuneata		
		G. glandulosa		
		I. ruspolii		
		I. rotundifolia		
	Orange and white flower	2 Barleria sp.		
		C. aucheri		
		C. ciliaris		
		L. senegalensis		

- Growth stages Woody vegetation post fruiting

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 15/33	85/8/5	RSP
	34	85/8/6	RSP
	35	85/8/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 85/9

Date: 26/6/79 Observer: Beckett Altitude 146 m.

Site Location - Lat. 5°06' Long. 47°14' Map Sheet No. 52

GENERAL DESCRIPTION Undulating gypseous sand with some gypseous outcrops.
Medium grass/herb cover

SOIL - General Very fine shallow sand on gypsum

Auger - Colour 10 YR 7/3 very pale brown

pH - Other comments

SURFACE WATER AND WELLS site adjacent to old wells

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Camels

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 44%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other information
		S. persica	All species	
		I. ruspolii	abundant	
	bush	A. aff. senegal		
	"Adorh"	S. jubae		
		D. glabra		
		I. donaldsonii		
		Commiphora sp.		
		D. glomerata		
		E. cuneata		
		C. glandulosa		
		J. villosa		
		Triumphetta sp.		
		A. lantana		
	Unidentified white flowered	Labiatee		
		C. ciliaris		
		S. ruspolianus		
		C. aucheri		
		Tetrachaete sp.		

- Growth stages Woody vegetation post fruiting
Herbs and grass fruiting and flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 16/3	85/9/9	RSP
	4	85/9/10	RSP
	5	85/9/11	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 89/4

Date:24/6/79 Observer: Beckett Altitude 220 m.

Site Location- Lat. 4°53' Long. 46°12' Sheet No. 58

GENERAL DESCRIPTION Undulating limestone ridges and banks of fine sand. Med/thin bush. Poor herb/grass cover.

SOIL - General Shallow very fine sand. Much exposed limestone and scattered surface roots.

Auger - Colour 5YR 5/6 yellowish/red

pH - Other comments

SURFACE WATER AND WELLS Surface water pools 1.5 km.

TERMITARIA Nil

EROSION Nil

DUNES Small banks of fine sand

GRAZING ANIMALS Goats

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 46%

- Components

Collection No.	Local Name	Identification	Abundance	Use and other Information
		A. tortilis	All abundant	
		A. horrida		
		A. senegal		
	"Fulai"	Acacia sp.		
		S. busseanus		
		B. hildebrantii		
		2 Commiphora spp.		
		Grewia sp.		
		B. minimifolia		
		E. cuneata		
		T. obbiadensis		
		I. donaldsonii		
		I. ruspolii		
		C. cinerascens		
		J. villosa		
		Triumphetta sp.		
		L. senegalensis		
		A. kelleri		
		Enteropogon sp.		

- Growth stages Woody vegetation flowering and fruiting.

PHOTOGRAPHS

Serial No.	Reference No.	Contents
J 15/7	89/4/5	Views along trace
8	89/4/6	"
9	89/4/7	"

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 89/3

Date: 25/6/79 Observer: Beckett Altitude 180 m.

Site Location- Lat. 4°49' Long. 46°23' Map Sheet No.

GENERAL DESCRIPTION Undulating limestone redges, surface rock strewn with a thin sandy mantle, sand banks in places.

Medium thick Commiphora bush. Very poor herb/grass cover.

SOIL - General Very shallow fine sand

Auger - Colour 5YR 5/8 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Tall variety

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover: 38%

- Components:

Collection No.	Local Name	Identification	Abundance	Use and other information
307		B. hildebrantii		
		I. donaldsonii		
306		3. Commiphora spp	All species abundant	
		A. trisulcus		
		A. senegal		
		Grewia sp.		
		A. horrida		
		A. recifiens		
		E. cuneata		
		B. minimifolia		
		C. ancistrophora		
		E. longispina		
		A. lanata		
	Small herb	Pavonia sp.		
		L. senegalensis		
		A. kelleri		
	Small annual	Tragus sp.		

- Growth stages Grass seeding

Woody vegetation seeding and post

Herbs fruiting

PHOTOGRAPHS	Serial No.	Reference No.	Contents
	J 15/10	89/3/5	R.S.P.
	11	89/3/6	R.S.P.
	12	89/3/7	R.S.P.

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO 90/3

Date: 27/6/79 Observer: Beckett Altitude 290 m.

Site location - Lat. $4^{o}34'$ Long. $47^{o}40'$ Map Sheet No. 67

GENERAL DESCRIPTION Undulating sandy hills, medium thick bush, medium grass cover, poor herb cover.

SOIL - General Deep very fine sand, rather unconsolidated

Auger - Colour 5 YR 5/6 yellowish red

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
	"Adhorh"	S. jubae	+	
		A. nilotica		
		A. horrida		
		B. orbicularis		
		D. glomerata		
		Cassia sp.		
		Triumphetta sp.		
		D. scindicum		
		H. cantortus		
		L. senegalensis		
		Aristida sp.		

- Grwoth stages Woody vegetation flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 16/23	90/3/5	RSP
	24	90/3/6	RSP
	25	90/3/7	RSP

APPENDIX 1.01 SAMPLING SITE DESCRIPTIONS SITE NO. 91/6

Date: 28.6.79 Observer: Beckett Altitude 90m

Site Location - Lat. 3°44' Long. 46°56' Map Sheet No. 79

GENERAL DESCRIPTION Flat, sandy, very thin bush, principally Dichrostachys
Medium grass cover, good herb cover.

SOIL - General Deep fine sand with a little silt

Auger - Colour 7.5 YR 5/6 strong brown

pH - Other comments

SURFACE WATER AND WELLS Nil

TERMITARIA Nil

EROSION Nil

DUNES Nil

GRAZING ANIMALS Nil

CROPPING Nil

OTHERS Nil

VEGETATION - Ground cover 64%

- Components:

Collection Number	Local Name	Identification	Abundance	Use and other Information
		D. glomerata	+	
		A. horrida		
		Grewia sp.		
		G. villosa		
	"Adorh"	S. jubae		
		C. flaviflora		
		H. aqqifolium		
	long thorns with galls	A. seyal		
		I. ruspolii		
		Veronia sp.		
	yellow flowers	Barleria sp.		
		L. senegalensis		
		D. scindicum		
		Aristida sp.		
		Sprobobolus sp.		

- Growth stages Woody vegetation seeding
Herb and grass flowering

PHOTOGRAPHS	Serial Number	Reference Number	Contents
	J 16/32	91/6/5	RSP
	33	91/6/6	RSP
	34	91/6/7	RSP

APPENDIX 1.02

Plants collected by J. Beckett during Central Rangelands Survey between November 1978 to June 1979

Number	Name	Family	Vernacular Name
1	Commiphora	Burseraceae	Hadi
2	Barleria	Acanthaceae	Kodatol
3	Euphorbia longispina	Euphorbiaceae	Gabo
4	Euphorbia somalensis var somalensis	Euphorbiaceae	Enchurr
5	Aristida	Gramineae	
6	Acacia paradoxa	Mimosaceae	Adad
7			
8			Sarin
9a	Tamarix	Tamaricaceae	Durr
9b	Tamarix aphylla	Tamaricaceae	Durr
10a	Eragrostis	Gramineae	
10		Gramineae	Dihir
11	Indigofera	Papilionaceae	
11a		Cyperaceae	
12		Gramineae	
13	Commiphora	Burseraceae	Gabra
13a	Commiphora	Burseraceae	
14		Compositae	
15	Melhania	Sterculiaceae	Degel-lo-lu
16			Noname
17	Loranthus curvifloris	Loranthaceae	
18	Hibiscus aponeurus	Malvaceae	
19	Commiphora	Burseraceae	
20	Fagonia	Zygophyllaceae	Leb
21	Blepharis	Acanthaceae	Kodatol
22			Bur-bur
23	Iphiona rotundifolia	Compositae	Isteer
24			
25		Gramineae	
26a	Tephrosia	Papilionaceae	Anka-garo
26b	Jatropha obiadensis	Euphorbiaceae	
26c	Aerva	Amaranthaceae	
26d	Arnevia hispidissima	Boraginaceae	
26e		Cyperaceae	Gersebe
26f	Panicum pinifolium	Gramineae	Daba da mereh
26g	Launea	Compositae	
26h	Urochondra setulosa	Gramineae	Henlole
26i	Suaeda micromeris	Chenopodiaceae	Darran
27	Commiphora flabellifera	Burseraceae	Hadi
27a		Gramineae	Afrug
28		Gramineae	Afrug
29	Cycnium	Scrophulariaceae	Gulere
30	Salsola pycnophylla	Chenopodiaceae	Gulan
31	Adenia globosa	Passifloriaceae	Handrue

32	Caesalpinia erianthera	Caesalpiniaceae	Gori
33	Acacia	Mimosaceae	Adad
34	Cissus	Vitaceae	Laba-alyole
34a	Maerua edulis	Capparidaceae	Ged-bahal
35	Commiphora	Burseraceae	
36	Commiphora	Burseraceae	
37	Commiphora	Burseraceae	
38	Tetrapogon spathaceus	Gramineae	Yeris
39	Maerua angolensis	Capparidaceae	Chih
40	Acacia	Mimosaceae	Wa-wa-ro
41	Rhynchosia	Papilioniaceae	Ria-heri
42	Convolvulus	Convolvulaceae	Hara, Daragil
43	Heliotropium	Boraginaceae	Magarafur
44			Madah-megag
45	Acacia	Mimosaceae	Gora
46a	Aristida	Gramineae	
46aa	Aristida	Gramineae	
46b	Aristida	Gramineae	
46c	Aristida	Gramineae	
47	Scaevola	Goodeniaceae	Helu
47a	Erythrina melanacantha ssp. somala	Papilionaceae	Yo-oh
48	Acacia	Mimosaceae	Adad
49	Dactyloctenium scindicum	Gramineae	
49a	Aristida	Gramineae	
50	Cassia	Caesalpinaceae	Chellel
50a	Aristida	Gramineae	
51	Indigofera	Papilionaceae	
52	Kleinia	Compositae	
53	Sporobolus ruspolianus	Gramineae	Sifar
54	Senra incana	Malvaceae	Balambal
55	Cadaba glandulosa	Capparidaceae	Galangal
56	Xylocalex	Schropulariaceae	
57	Acacia leucospira	Mimosaceae	la-agale, Cherchigle
58	Limonium distichum	Plumbaginaceae	Darran
59	Zygophyllum album	Chenopodiaceae	Darran-da-waraho
60	Indigofera sparteola	Papilionaceae	Hageen
61	Fagonia	Zygophyllaceae	Leb
62			
65	Acacia senegal	Mimosaceae	Adad
66	Tetrapogon spathaceus	Gramineae	Yeris
67	Enteropogon	Gramineae	Baldole
68		Rubiaceae	Shah-durr
69	Acacia edgeworthii	Mimosaceae	
70	Anisotes	Acanthaceae	Deg-weyn
71		Gramineae	

72	Cassia	Caesalpinaceae	Chaor,Ged-guran
73	Indigofera	Papilionaceae	Daba-leidshir
74a	Cenchrus echinatus	Gramineae	Baldole
74b	Eragrostis	Gramineae	
75	Loewia glutinosa	Turneraceae	Rhumosan
76		Gramineae	
77	Cleome	Capparidaceae	Dufnud
78	Indigofera	Papilionaceae	Hageen
79	Barleria	Acanthaceae	
80			
81	Stipagrostis hirtigluma	Gramineae	
82			
83		Gramineae	
84	Chloris	Gramineae	
85	Maerua	Capparidaceae	
86	Sporobolus ruspolianus	Gramineae	
87a	Aristida	Gramineae	
87b	Aristida	Gramineae	
88	Stipagrodtis hirtigluma	Gramineae	
89	Barleria	Acanthaceae	
90			Ged-ad
91	Grewia penicillata	Tiliaceae	Ho-hob
92			Nagar
93	Asparagus	Liliaceae	Ergeg
94	Caesalpinia erianthera	Caesalpiniaceae	Gori
95	Sarcostemma andorigense	Asclepiadaceae	Sy-ri
96	Grewia tenax	Tiliaceae	Darafurur
97	Cleome	Capparidaceae	
98	Adenium	Apocyanaceae	Abor-bor
99	Ipomea donaldsonii	Convolvulaceae	Meduyo
100	Jatropha dichtar	Euphorbiaceae	Diktar
101	Euphorbia	Euphorbiaceae	Gabo-yeri
102	Hildebrantia	Convolvulaceae	
103	Solanum	Solanceae	
104			
105	Dicrostachys glomerata ssp. benadirensis	Mimosaceae	Egan
106	Commiphora ancistrophora	Burseraceae	Dusundus
107	Pterodiscus	Pedalliaceae	Ba-arorh
107a	Leptothrium senegalensis	Gramineae	
108			
109	Commiphora	Burseraceae	Afgub
109a	Cleome	Capparidaceae	
110	Jatropha	Euphorbiaceae	Taraho
111			
112	Crotolaria	Papilionaceae	

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113		Liliaceae	
114	Acacia	Mimosaceae	Warwah, Warawa
115	Sesmothamnus busseanus	Pedaliaceae	Salelma
116	Kelleronia	Zygophyllaceae	Lal
117	Sesmothamnus rivae	Pedalilaceae	Salelma
118		Cyperaceae	Tima-fa-we
119	Pavonia zeylonica	Malvaceae	
119a	Erythrina melanacantha ssp. somala	Papilionaceae	
120	Commiphora	Burseraceae	Garon
121	Commiphora erhlangerana	Burseraceae	Duncal
122	Cadaba heterotricha	Capparidaceae	Higle
123	Ormocarpum	Papilionaceae	
124	Pleuropterantha revoilii	Amaranthaceae	Nagar-did
125	Maerua edulis	Capparidaceae	Ged bahal
126	Adenium	Apocynaceae	Abor-bor
126a	Commiphora	Burseraceae	
127		Tiliaceae	Da-ul
128	Acacia nubica	Mimosaceae	Gomar
129	Acacia	Mimosaceae	Fulai
130	Adenium	Apocynaceae	
131	Lannea	Anacardiaceae	Garsh-a-gurum
132	Blepharispermum fructicosum	Compositae	Gorhair, gerhay
133	Boswellia	Burseraceae	Beh yab
134	Grewia penicilliata	Tiliaceae	Ho-hob
135	Gyrocarpus hababensis	Hernandiaceae	Yo-ub
136		Cyperaceae	Ris
137	Terminalia orbicularis	Combretaceae	Dissak, Bissak
138	Euphorbia inequispina	Euphorbiaceae	Gaba yer-yer
139	Cephalocroton cordofanus	Solanaceae	Chimba
140	Jatropha villosa var. glabra	Euphorbiaceae	Deglo
141	Anisotes trisulcus	Acanthaceae	Meh-chibi
142	Indigofera ogadensis	Papilionaceae	Hageen
143	Caucanthus	Malphigiaceae	Che-fi-i
144		Caesalpinaceae	Cahn-sole
145	Tricodesma	Boraginaceae	Ria-ri
146	Dobera glabra	Salvadoraceae	Garas
147		Cyperaceae	
148			Garandro
149		Liliaceae	Gel-wah
150	Indigofera ruspolii	Papilionaceae	Chillub
151	Indigofera	Papilionaceae	Hageen
152	Crotolaria	Papilionaceae	
153	Acacia	Mimosaceae	Chirogho
154	Tephrosia obbiadensis	Papilionaceae	Sara-adi
155	Merremia	Convolvulaceae	Berri-dachis

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156	Sanservia	Liliaceae	
170	Urochondra setulosa	Gramineae	
171	Acacia horrida ssp. benadirensis	Mimosaceae	
172		Gramineae	
173		Gramineae	
174	Tragus	Gramineae	
175	Caucanthus	Malphigiaceae	
176	Aristida	Gramineae	
177	Indigofera	Papilionaceae	
178	Lasicorys	Labiatae	
179	Sporobolus	Gramineae	
180	Tripogon	Gramineae	
181		Gramineae	
182		Gramineae	
183		Gramineae	
184	Sporobolus	Gramineae	
185	Espesia danis	Convolvulaceae	
186	Hibiscus	Malvaceae	
187	Polligila	Papilionaceae	
188	Euphorbia bifida	Euphorbiaceae	
189	Chloris	Gramineae	
191	Chrysopogon aucheri var quinqueplumis	Gramineae	Daremo
192	Jatropha	Euphorbiaceae	
193	Tetrachaete	Gramineae	
194		Schropulariaceae	
195	Cordia	Boraginaceae	Ud
196	Terminalia	Combretaceae	
197	Justicia	Acanthaceae	
198	Melhania	Stercullariaceae	
199	Melhania	Stercullariaceae	
200	Cordia	Boraginaceae	
201	Cordeauxia edulis	Caesalpinaceae	Ye-eb
202		Cyperaceae	
203	Tetrapogon	Gramineae	
204		Gramineae	
205	Arthrocarpum somalensis		Del-outa
206			
207	Erithroclamis spectablis	Labiateae	
208	Aloe	Lilaceae	
209		Gramineae	
210	Coelachyrum stoloniferum C.E. Hubb	Gramineae	
211	Cenchrus	Gramineae	
212		Gramineae	
213	Tetrachaete	Gramineae	
214	Enneapogon cenchroides	Gramineae	

215	Tetrapogon	Gramineae	
216	Eragrostis	Gramineae	
217		Cyperaceae	
218		Cyperaceae	
219	Aristida	Gramineae	
220			
221	Sporobolus	Gramineae	
222	Indigofera	Papilionaceae	Haggeen"
223	Acacia	Mimosaceae	
224	Acacia ana u ispinosa (Fiori) Chiov.	Mimosaceae	
225	Solanum	Solanaceae	
226		Cyperaceae	
227		Cyperaceae	
228	Pavonia	Malvaceae	
229	Aristida	Gramineae	
230	Eragrostis	Gramineae	Doye
231	Aristida	Gramineae	
232			
233		Gramineae	
234	Aristida	Gramineae	
235	Aristida kelleri	Gramineae	
236	Stipagrostis	Gramineae	
237	Aristida	Gramineae	
238	Aristida	Gramineae	
239	Aristida	Gramineae	
240		Labiatae	
241	Pleuropteranthera revoilii	Amaranthaceae	Nagar-dib
242		Compositae	Darran
243	Solanum jubae	Solanaceae	Adorh
244	Commicarpus reniformis	Nyctaginaceae	
245	Barleria	Acanthaceae	
246	Dalbergia	Papilionaceae	Daba-keer
247	Solanum gracilipes	Solanaceae	
248	Indigofera schimperi	Papilionaceae	
249	Scilla	Lilaceae	
250	Aneilema pusillum	Commelinaceae	
251			
252	Heliotropium	Boraginaceae	
253	Acacia stuhlmanii	Mimosaceae	Rhei-deer
254		Gramineae	
255	Sporobolus	Gramineae	
256		Gramineae	
257		Convolvulaceae	
258	Acacia edgeworthii	Mimosaceae	Cheerin
259	Euphorbia	Euphorbiaceae	Gaba yer-yer

260	Barleria	Acanthaceae	Kodatol
261	Jatropha	Euphorbiaceae	
262	Acacia edgeworthii	Mimosaceae	
263	Sarcostemma		
264	Adenium somalense	Apocynaceae	
265	Limonium axillare	Plumbaginaceae	
266	Dactyloctenium	Gramineae	
267	Heliotropium	Boraginaceae	
268	Indigofera spinosa	Papilionaceae	
269	Caesalpinia trothae ssp. erlaugeis	Caesalpiniaceae	
270	Aristida	Gramineae	
271		Gramineae	
272	Dignathia	Gramineae	
273		Gramineae	
274	Tetrapogon	Gramineae	
275	Tragus	Gramineae	
276	Euphorbia	Euphorbiaceae	
277	Euphorbia bifida	Euphorbiaceae	
278	Capitanya	Labiatae	
279	Indigofera	Papilionaceae	
280	Hildebrantia	Convolvulaceae	
281	Aristida	Gramineae	
282	Cyclocheilon	Verbenaceae	Ged-jabot
283	Sterculia rhynchocarpa	Sterculiaceae	
285	Aneilema obbiadense var. angustifolium	Commelinaceae	
286	Phyllanthus	Euphorbiaceae	Nagar
287	Grewia tenax	Tiliaceae	
288	Cordyla somalensis	Papilionaceae	Un-turr
289	Euphorbia gossi	Euphorbiaceae	Goss
290	Hildebrantia	Convolvulaceae	
291	Triumfetta	Tiliaceae	
292	Ipomea citrina	Convolvulaceae	
293	Dicrostachys	Mimosaceae	Diktar
294	Kelleronia	Zygophyllaceae	
295	Solanum jubae	Solanaceae	Adorh
296	Aristida sieberana	Gramineae	
297		Gramineae	
298		Cyperaceae	
299			
300	Ctenopsis	Gramineae	
301			
302			
303			
304	Boswellia	Burseraceae	Merchan, Merjeen.
304a	Psilotrichum	Amaranthaceae	

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305	Heliotropium	Boraginaceae	
305a		Malvaceae	Tima-fa-he
306			
307	Cadaba glandulosa	Capperidaceae	Galanhal
308	Indigofera	Papilionaceae	
309	Euphorbia cuneata	Euphorbiaceae	Derindir
310	Indigofera	Papilionaceae	Hagin
311		Gramineae	
312	Sporobolus	Gramineae	
313			Wes
314		Asclepiadaceae	Bar-arorh
315		Moringaceae	
316	Moringa	Gramineae	Baldole
317	Enteropogon	Zygophyllaceae	
318	Kelleronia	Gramineae	
319	Sporobolus ioclados	Capparidaceae	Galangal
320	Cadaba	Mimosaceae	Mori
321	Acacia nilotica	Mimosaceae	
322	Acacia reficiens ssp. misera	Labiatae	
323		Gramineae	Doye
324		Gramineae	
325		Gramineae	Ouse mulleh
326	Heteropogon contortus		Aus
327		Mimosaceae	
328	Acacia horrida		Balambal
329		Gramineae	
330	Aristida sierberana	Gramineae	
331	Aristida	Gramineae	Ous mulleh
332		Boraginaceae	
332a	Heliotropium	Gramineae	
333		Papilionaceae	
334	Cordyla somalensis	Acanthaceae	Gahir
335		Turneraceae	Bal-la-lock
336	Loewia	Euphorbiaceae	Degle
337	Jatropha villosa var glabra	Papilionaceae	Cahn-sole
338		Malvaceae	
339	Hibiscus	Malvaceae	
340	Ipomea	Burseraceae	
341	Commiphora	Compositae	Gu-gup
342	Iphiona rotundifolia	Caesalpiniaceae	Ye-eb
343	Cordeauxia edulis	Gramineae	
344	Aristida	Boraginaceae	Ley-lan
345	Heliotropium	Boraginaceae	Merreh
346	Cordia	Simarcubaceae	Kulan
347	Balanites	Mimosaceae	Ji-ga, Je-ga
348	Acacia seyal		

349		Acanthaceae	Serim
350	Grewia	Tiliaceae	Mira-as
351	Clerodendron microphyllum	Verbenaceae	Dumi
352	Chrysopogon aucheri var quinqueplumis	Gramineae	Daremo
353		Gramineae	Dulun
354	Grewia	Tiliaceae	
355	Panicum	Gramineae	Sayir
356	Enneapogon cenchroides	Gramineae	
357	Indigofera	Papilionaceae	
358	Salsola bottae	Chenopodiaceae	Harum
359	Hartogia aquifolium	Celastraceae	Meged
360	Aristida	Gramineae	
361	Coelachyrum stoloniferum	Gramineae	
362	Dactyloctenium	Gramineae	
363	Heteropogon contortus	Gramineae	
364		Gramineae	
365		Gramineae	
366	Boscia coriaceae	Capparidaceae	Degerere
367	Jatropha	Euphorbiaceae	Urbei
368	Grewia	Tiliaceae	
369	Halopyrum mucronatum	Gramineae	
370	Aliscycarpus	Papilionaceae	Tegh
371		Cyperaceae	
372	Grewia cerasifera	Tiliaceae	Hamud
373		Cyperaceae	Daalin
374	Indigofera	Papilionaceae	
375	Sporobolus spicatus	Gramineae	
376	Kleinia	Compositae	
377	Aristida	Gramineae	
378		Cyperaceae	
379	Enteropogon	Cyperaceae	
380		Cyperaceae	Dalen
381	Terminalia	Combretaceae	Hara, Har-reri
382	Buxus hildebrantii	Buxaceae	
383	Cadaba	Capparidaceae	Ugun-bi
384	Arthrocarpum somalensis		
385		Gramineae	
386	Aneilema	Commelinaceae	
387		Labiatae	
388	Indigofera	Papilionaceae	
389	Gyrocarpus	Hernandiaceae	Ya-yir
390	Aristida	Gramineae	
391	Commiphora	Burseraceae	Gun-dud
392	Aristida	Gramineae	
393	Stipagrostis hirtigluma	Gramineae	

394	Commiphora	Burseraceae
395		Compositae
396	Jatropha	Euphorbiaceae
397		Compositae
398	Salsola bottae	Chenopodiaceae
399	Acacia stuhlmannii	Mimosaceae
400		Gramineae
401	Panicum pinifolium	Gramineae

APPENDIX 1.03

Plants collected by J.B. Gillett, C.F. Hemming and R.M. Watson in connection with survey of the central range lands, Somalia, the area from 3°20' to 7°30'N and 45° to 49°E in May-June 1979.

22.5.79 By airstrip c. 2 km NE of Galkayo

21884	Indigofera articulata Gouan	Papilionaceae
5	Convolvulus ruspolii Hall f.	Convolvulaceae
6	Corchorus depresses (L) Stocks	Tiliaceae
7	Indigofera colutea (Burm.f.) Merr. var. somalensis (Baf.f.) Gillett	
8	Cassia truncata Brenan (abundant and widespread)	Caesalpiniaceae
9	Tephrosia subtriflora Bak.	Papilionaceae
21890	Cassia ellisae Brenan (larger and much less common than 21888)	Caesalpiniaceae
1	Iphiona rotundifolia Oliv. & Hiern	Compositae
2	Heliotropium sp.	Boraginaceae
3	Pavonia pirottae (A. Terr.) Chiov.	Malvaceae
4	Xylocalyx hispidus S. Carter	Scrophulariaceae
5	Cucumis prophetarum L. ssp. dissectus (Nand.) (C. Jeffrey)	Cucurbitaceae
6	Pluchea sarcophylla Chiov.	Compositae
7	Abutilon sp.	Malvaceae
8	Bergia sp. ?new?	Elatinaceae
9/A	Echiochilon longiflorum Benth.	Boraginaceae
9/B	Echiochilon sp. (corolla smaller)	Boraginaceae
21900	Cleome brachycarpa DC (common and widespread)	Capparaceae
1	Tephrosia quartiniana Cuf.	
2	Indigofera sp. nov. aff. I.phillipsiae Baf.f.	
3	Heliotropium subulatum (DC.) Martelli	
4	Pleuropterantha reviolii Franch. (common and widespread)	Amaranthaceae
5	Merremia semisagitta (Peter) Dandy forma	Convolvulaceae
6	Indigofera prob. new, subsection Centrae B	
7	Indigofera hochstetteri Bak.	
8	Indigofera ruspolii Bak.f. (common and widespread)	
9	Hyalocystis Viscosa Hall.f.	Convolvulaceae
21910	Aristida stenophylla Henr.	Gramineae
1	Dichanthium foveolatum (Del.) Roberty	Gramineae
2	Cenchrus ciliaris L. (abundant)	Gramineae
3	Stipagrostis uniplumis (Licht.) De Winter (Aristida papposa)	Gramineae
4	Indigofera trita L.f. var. microphylla (Chiov.)	
5	Tribulus terrestris L. forma vel sp. aff.	Zygophyllaceae
6	Jatropha tropaeolifolia Pax	Euphorbiaceae
7	Jatropha glandulosa Vahl var. glandulosa (J. villosa (Forsk.) Muell. Arg. non Wight)	Euphorbiaceae
8	Blepharis linariifolia Pers.	Acanthaceae
9	Sporobolus ruspolianus Chiov.	Gramineae

21957 Euphorbia somalensis Pax

8 Heliotropium sp. 'A' = Bally & M. 15475 (excerted anthers)

9 Dactyloctenium scindicum Boiss Gramineae

21960 Commiphora aff. parvifolia (Balf. f.)Engl.

24.5.79 on main Rd. 24 km. N. of Galkayo

21961 Coccinia grandis (L.) Voigt Cucurbitaceae

2 Commiphora parvifolia sensu Chiov (1932) vix (Balf.f.) Engl.

24.5.79 main Rd. 34 km. N. of Galkayo

21963 Pleuropterantha revoilii Franch.

4 Hermannia paniculata Franch. Sterculiaceae

5 Resedaceae

6 Commiphora aff. parvifolia (Balf. f.)Engl.

7 Cleome parvipetala R.A. Grah.

8 Megalochlamys linifolia (Lindau) Lindau Acanthaceae

9 Commiphora oddurensis Chiov. ?

21970 Acacia paradoxa Chiov. e descr. et ic. (not the same as A. hamulosa or a Benth in spite of what Ross says in 1974)

1 Commiphora

24.5.79 36 km. N. of Galkayo

21972 Diceratella sinuata (Franch.) James Cruciferae

3 Indigofera seequijuga Chiov. e descr. et ic.

4 Indigofera coerulea Roxb. var. occidentalis Gillett and Ali

5 Noecentema robecchii (Loft) Schinz Amaranthaceae

24.5.79 4 km. S. of Bahadwein

21976 Farsetia sp.(= 22108) Cruciferae

7 Pterodiscus ruspolii Engl. Pedaliaceae

8 Acacia ancistroclada Brenan (new for Somalia)

9 (Too immature to name) Compositae

21980 Ficus somalensis (Pamfran.) Chiov. e descr. Moraceae

1 Zygophyllum somalense Hadidi

2 Heliotropium subulatum(DC.)Martelli forma vel .sp. aff.

24.5.79 Bahadwein

21983 Zygophyllum simplex L.

4 Lagenantha nogalensis Chiov Chenopodiaceae

5 Ziziphus spina-christi (L.) Desfont (perhaps cultivated) Rhamnaceae

24.5.79 12 km. N. of Bahadwein on main Rd.

21986 Dasysphaera alternifolia Chic'. Amaranthaceae

7 Corchorus bricchettii Weimarck

8 Commiphora candidula Sprague

9 ?Boswellia microphylla Chiov. (sterile)

21990 Oxygonum sagittatum R. Grah. forma (if so new to Somalia) Polygonaceae

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21991	Tephrosia quartiniana Cuf.	
	24.5.79 24 Km. N. of Bahadwein	
21992	Delonix baccal (Chiov.) Bak. f.	Caesalpiniaceae
3	Boswellia microphylla Chiov.	
	24.5.79 Tula buriagob 7°21'N on main Rd.	
21994	Tribulocarpus dimorphanthus (Pax) S. Moore	Aizoaceae
	24.5.79 7°23'N on main Rd.	
21995	Dalbergia commiphoroides Bak.f. (only seen N. of this spot)	Papilionaceae
	25.5.79 Camp site at 7°24'N, 47°45'E	
21996	Pavonia pirottae (A. Terr.) Chiov.	
7	Cyphostemma sp.	Vitaceae
8	Cadaba farinosa Forsk. ssp. farinosa	
9	Commiphora sp. aff. erythraea (Ehrenb.) Engl.	
22000	Commiphora ?ellenbeckii Engl.	
1	Pavonia sp.	
2	Boswellia rivae Engl. (B. boranensis)	
3	Balanites orbicularis Sprague	
	25.5.79 2.5 km. E. of Camp site	
22004	Gyrocarpus hababensis Chiov. var. hababensis	Hernandiaceae
	25.5.79 4 km. E of Camp site	
22005	Neuracanthas polyacanthus (Lindau) C.B.Cl.	Acanthaceae
6	Commiphora ?playfairii (Hook.f.) Engl.?	
7	Cordia ovalis R.Br. forma vel sp. aff.	Boraginaceae
8	Lippia carviodora Meikle	Verbenaceae
9	Sporobolus helvolus (Trin.) Dur. and Schinz	Gramineae
22010	Sporobolus helvolus (Trin.) Dur. and Schinz	Gramineae
1	Enteropogon rupestris (J.A. Schum.)A. Chev.	Gramineae
	25.5.79 area of vegetation arcs, 7°27'N, 47°50'E	
22012	Barleria aff. B. proxima Lindau	
3	Pavonia sp.	
4	Rumicicarpus ramosissimus Chiov. e descr. et ic.	Tiliaceae
5	Commiphora erythraea (Ehrenb.) Engl. forma vel sp.aff.	
6	Acacia horrida (L) Willd. ssp. benadirensis (Chiov.) Hillc. and Bren.	
	25.5.79 near 22005	
22017	Crotalaria dumosa Franch. forma vel. sp. nov. aff. (flowers too large)	Papilionaceae
8	Odontella sp.	Loranthaceae
9	Albizia anthelmintica (A. Rich) Brongn.	Mimosaceae
	25.5.79 6 km. SW of Camp site	
22020	Caucanthus edulis Forsk.	Malpighiaceae
1	Commiphora aff. parvifolia (Balf.f.) Engl.	
2	Cephalocroton cordofanus Hochst.	Euphorbiaceae
3	Triumfetta actinocarpa S. Moore	Tiliaceae
	25.5.79 1 km. S. of Tulaburiagob, on main road	
22024	Aristida kelleri Hack.	

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25.5.79 8 km. E of Bahadwein

22025/A	Ipomoea donaldsonii Rendle (common and widespread)	Convolvulaceae
5/B	Euphorbia hadramautica Bak. (1 only, once seen elsewhere)	
6	Commicarpus reniformis (Chiov.) Cuf.	Nyctaginaceae
7	Portucala sp.	Portulacaceae
8	Dicoma, cf. D. gnaphaloides Mattei	Compositae

25.5.79 10 km. E. of Bahadwein

22029	Commiphora sulcata Chiov e descr.	
22030	Oxygonum sagittatum R. Grah. forma	
1	Specimen lost	

25.5.79 18 km. W of Burdale

22032/A	Tephrosia sp. aff. T. purpurea (L.) Pers.	
/B	Commiphora ?erlangerana Engl. or retifolia Chiov.	

26.5.79 Camp site 2 km. E. of Burdale

22033	Comiphora sp. aff. sulcata Chiov. 1-foliolate form	
4	Euphorbia inaeqispina N.E.Br.	
5	Cocculus pendulus (J.R. and G. Forst.) Diels (not seen elsewhere)	Menispermaceae
6	Commiphora crassispina Sprageu e descr. et ic.	
7	Kelleronia obbiadensis Chiov.	Zygophyllaceae

26.5.79 5 km. E. of Burdale

22038	Astripomoea nogalensis (Chiov) Verdc.	Convolvulaceae
9	Caesalpinia erianthera Chiov. (widespread)	Caesalpiniaceae

26.5.79 6.5 km. E. of Burdale

22040	Commiphora sect. Opobalsamum sp.	
22041	Moringa longituba Engl. (not seen elsewhere)	Moringaceae

26.5.79 11 km. E. of Burdale

22042	Acacia ogadensis Chiov.	

26.5.79 15 km. E. of Burdale

22043	Loewia glutinosa Urb.	Turneraceae

26.5.79 18 km. E. of Burdale

22044	Acacia hamulosa Benth.	
5	Acacia sp. aff. A. edgeworthii T. Anders.	

26.5.79 13 km. W. of Ballibasle

22046	Erythrina melanacantha Harms. ssp. somala (Chiov.) Gillett	Papilioneceae

26.5.79 1 km. E. of Ballibasle

22047	? Corchorus bricchettii Weimark Diseased?	Tiliaceae
8	Jatrapha glandulosa Vahl var glandulosa	

26.5.79 7 km. E. of Ballibasle

22049	Jatropha dichtar Macbr.	
22050	Indigofera prob. new, subsection Centrae B	
1	Commiphora candidula Sprague	

26.5.79 6 km. W. of Seemadi

22052	Ziziphus hamur Engl.	

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	26.5.79 Bubis Village	
22053	Canavalia virosa Wight & Arn. (Cultd.)	Papilionaceae
	26.5.79 5 km. E. of Seemadi	
22054	Triumfetta actinocarpa S. Moore	
5	Dignathia villosa C.E. Hubb. (small hooded grass)	Gramineae
6	Euphorbia sect. Diacanthium sp.	
	26.5.79 13 km W. of Jeriban	
22057	Commiphora sp. cornii Chiov. ?? e descr. et ic.	
8	Commiphora	
9	Commiphora ?paolii Chiov.	
	27.5.79 Camp 12 km. S. of Jeriban	
22060	Ormocarpum sp. nov.	Papilionaceae
1	Rhynchosia minima (L.)DC. var. prostrata (Harv.) Meikle	Papilionaceae
2	Cyclocheilon somaliense Oliv.	
3	Cassia puccioniana Chiov. forma (4 instead of 2 pair of leaflets)	
4	Conostomium kenyense Brem.	Rubiaceae
5/A	Jatropha paradoxa (Chiov.) Chiov. e descr. et ic.	
5/B	Jatropha sp. aff. arguta Chiov.	
6	Melhania sect. hymenophros sp.	Sterculiaceae
7	Melhania ?coriaceae Chiov. ex ic.	Sterculiaceae
8	Pavonia kotschyi Webb small flowered form	
9	Pavonia kotschyi Webb large flowered form	
22070	?Pentanopsis sp. (in fruit)	Rubiaceae
1	Farsetia sp. nov. (? 22328)	
2	Polygala liniflora Boj. (s. seedling see 22096)	Polygalaceae
3	Cynanchum hastifolium K. Schum. forma sp. nov. aff.	Asclepiadaceae
4	Launaea hafunensis Chiov.	Compositae
5/A	Mariscus amauropus (Stevd.) Cuf.	Cyperaceae
5/B	Mariscus sp.	
6	Svensonia moldenkei Gillett forma vel sp. aff.	Verbenaceae
7	Monsonia? sp. nov.	Geraniaceae
8	Basananthe sp. nov.	Passifloraceae
9	Oxygonum sp. nov. (fruits with wings as welllas spines)	
22080	Euphorbia cuneata Vahl forma vel sp. aff. (leaves lobed)	
1	Aspidoglossum sp. (but leaves alternate !)	Asclepiadaceae
2	Commiphora sect. opobalsamum sp. 'E'	
3	Tribulocarpus dimorphansus (Pax)S.Moore	Aizoaceae
4	Sphaerocoma hookeri T. Anders (Hafunia globifera)	Caryophyllaceae
5	Acacia edgeworthii T. Anders	
6	Acacia turnbulliana Brenan, new record for Somalia	
7	Pavonia ?minimifolia Chiov. e descr.	
8	Fagonia sp.	Zygophyllaceae
9/A	Heliotropium sp.	

25.5.79 8 km. E of Bahadwein

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4	Launaea hafunensis Chiov.	Compositae
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5/B	Mariscus sp.	
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4	Sphaerocoma hookeri T. Anders (Hafunia globifera)	Caryophyllaceae
5	Acacia edgeworthii T. Anders	
6	Acacia turnbulliana Brenan, new record for Somalia	
7	Pavonia ?minimifolia Chiov. e descr.	
8	Fagonia sp.	Zygophyllaceae
9/A	Heliotropium sp.	

	27.5.79 17 km. S. of Jeriban	
22089/B	Indigofera ogadensis Gillett (new for Somalia s. str.)	
22090	Spermacoce sp. nov.?	Rubiaceae
1	Acacia cheilanthifolia Chiov. (not sarcophylla which has a capitate inflorescence)	
2	Afrotrichloris hyaloptera Clayton	Gramineae
3	Cassia puccioniana Chiov.	
4	Cyclocheilon somaliense Oliv.	
5	Ochradenus somalensis Bak.f.	Resedaceae
6	Polygala liniflora Chod.	
	27.5.79 23 km. S. of Jeriban	
22097	Barleria sp. aff. waggana Reudle	
	27.5.79 28 km. S. of Jeriban	
22098	Cyperus sp. (= Makin S.A. & Gordon 1)	Cyperaceae
9/A	?Cyperus sp.	Cyperaceae
9/B	Cyperus prob. immature 22098	Cyperaceae
22100	Cyperus sp.	
	27.5.79 33 km. S. of Jeriban	
22101/A	Melhania ?parvifolia Chiov. e descr.	
/B	not matched in EAH	Amaranthaceae
	27.5.79 44 km. S. of Jeriban	
22102	Genus unknown, not matched in E.A.H.	Scrophulariaceae
	27.5.79 47 km. S. of Jeriban	
22103	Digitaria macroblephara (Hack.) Stapf	
	27.5.79 48 km. S. of Jeriban	
22104	Dicoma somalensis S. Moore forma	Compositae
	27.5.79 61 km. S. of Jeriban	
22105	Commiphora ?aff. parvifolia (Balf.f.)Engl.	
6	Salsola bottae (Jaub. & Spach) Boiss.	Chenopodiaceae
7	Aristida Kelleri Hack	
8	Farsetia sp. (? = 21976)	
	27.5.79 5 km. S. of Afbarwaago	
22109	Tamarix nilotica (Ehrenb.) Bunge	Tamaricaceae
	27.5.79 9 km. S. of Afbarwaago	
22110	Anabasis ehrenbergii Boiss. (a big range extension)	Chenopodiaceae
	27.5.79 10 km. S. of Afbarwaago	
22111	Suaeda micromeris Brenan	Chenopodiaceae
	27.5.79 13 km. S. of Afbarwaago	
22112	Aloe sp.	Liliaceace
	27.5.79 17 km. S. of Afbarwaago	
22113	Urochondra setulosa (Trin.) C.E. Hubb.	Gramineae
4	Neuracanthus stolonosus Chiov. e descr.	Acanthaceae
5	Xylocalyx recurvus S. Carter	Scrophulariaceae
6	Helichrysum sp. cf Bally & M 15986	Compositae
7	Abutilon sp.	
8	Psilotrichum amplum Suesseng.	

22119	Dalbergia microphylla Chiov.	
	27.5.79 35 km. from Sea 6°7'N, 48°40'E	
22120	Terminalia sp. aff. polycarpa Engl. & Diels	
	28.5.79 Coast at end of cut line 5°55'N	
22121	Indigofera articulata Gouan	
2	Blepharis glinus Fiori ex ic	Acanthaceae
3	Heliotropium sp. = Tsaha 80	
4	Trianthema triquetra Willd.	Aizoaceae
5	Psilotrichum tomentosum Chiov.	
6	Justicia flava Vahl	Acanthaceae
7	Launaea intybacea (Jacq.) Beauv.	Compositae
8	Polycarpaea spicata Wight & Arn forma vel sp. aff	Caryophyllaceae
9	Lycium europaeum L. s. lat.	Solanaceae
22130	Leucas sp.	Labiatae
1	Achyranthes aspera L.	Amaranthaceae
2	Cucumis sp.	Cucurbitaceae
3	Solanum sp. aff. marginatum L.f.	
4	Indigofera tritoides Bak.	
5	Capparis cartilaginea Decne.	
6	Commicarpus helenae (J.A. Schultes) Meikle (C. verticellatus Auctt.non (Poir.) Standl.	Nyctaginaceae
	28.5.79 on cut line 1-2 km. from Sea	
22137	Commiphora aff. parvifolia (Balf.f.) Engl.	
8	Oldenlandia saxifragoides Chiov.	Rubiaceae
9	Limonium sp.	
22140	Pavonia sp.	
1	Possibly Polycarpaea sp. nov. but material too poor	Amaranthaceae
2	? Ocimum sp. near tomentosum Oliv.	Labiatae
3	Phyllanthus spinosus Chiov. ?	Euphorbiaceae
4	Panicum pinifolium Chiov.	Gramineae
5	Afrotrichloris martinii Chiov.	Gramineae
	28.5.79 On cut line 4 km. from Sea	
22146	perhaps Oldenlandia oryptocarpa Chiov e descr.	Rubiaceae
7	Justicia G. Rostellularia, of J. leucoclada Chiov.	
8	Rhynchosia schimperi Boiss. ? an Arabian species not hitherto known recorded from Africa	
9	Heteropogon contortus (L.) Roem. & Schult.	Gramineae
22150	Cymbopogon schoenanthus (L.) Spreng.	Gramineae
1	Sporobolus kelvolus (Trin.)Dur. & Schinz	Gramineae
2	Enneapogon desvauxii P. Beauv.	Gramineae
3	?Digitaria sp.	Gramineae
4	perhaps Coelachyrum stoloniferum C.E. Hubb. e descr.	Gramineae
	28.5.79 on cut line 14 km. from Sea	
22155	Merremia gorinii Chiov.	
6	Indigofera sp.	

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28.5.79 On cut line 16 km. from Sea

22157	Cyphostemma phyllomicron (Chiov.) Desc. forma eglandulosum (Chiov.) Desc. e descr.	Vitaceae
8	Helichrysum sp. af. Bally & M 15986	Compositae
9	Indigofera phillipsiae Bak. f.	
22160	Crotalaria sp. aff. microphylla Vahl (= Paskin H 72)	
1	Pentanisia longituba (Franch.) Oliv.	Rubiaceae
2	Cucumis prophetarum L. ssp. dissectus (Nand.)C.Jeffr.	
3	Coelachyrum sp. aff. poiflorum Chiov.	
4	Dichanthium annulatum (Forsk.) Stapf var.annulatum	Gramineae
5	Jatropha paradoxa (Chiov.) Chiov.	
6	Cyperus maritimus Poir.	Cyperaceae

28.5.79 18 km. from Sea on cut line

22167	Vernonia cinerascens Sch. Bip.	Compositae
8	Tephrosia subtriflora Bak.	
9	Hibiscus sect. Bombycella ?new (=22313 and 22389)	
22170	Barleria argentea Balf.f.	Acanthaceae
1	Crotalaria sp. nov. aff. saltiana Andr. (=22510)	Acanthaceae
2	perhaps Coelachyrum stoloniferum C.E. Hubb. e descr.	Gramineae
3	Cynodon dactylon (L.) Pers.	Gramineae
4	Urochloa rudis Stapf	Gramineae
5	Dicoma sp. nov.	Compositae
6	Indigofera volkensii Taub. forma vel. sp. aff.	
7	Heliotropium steudneri Vatke	
8	Aristida stenophylla Henr.	Gramineae
9	Pennisetum divisum (Gmel.) Henr.	Gramineae

28.5.79 Clifftop by Sea 6°1'N

22180	Pentanisia sp. nov. (= 22205)	Rubiaceae
1	Echiochilon sp. (=22204)	Boraginaceae
2	Rhynchosia schimperi Boiss.?	
3	Melhania?	
4	Jatropha obbiadensis Chiov. from photo of type	
5	Commiphora sp. aff. planifrons (Schweinf.) Engl.	

29.5.79 Coast 5°55'N

22186	Lycium europaeum L.s. lat.	
7	Mariscus sp. aff. hemisphaericus (Boeck) C.B. Cl. (possibly M. scleropodus (Chiov.) Cuf)	
8	Cyperus conglomeratus Rottb. forma	Cyperaceae
9	Halopyrum mucronatum (L.) Stapf	Gramineae
22190/A	Strobopetalum bentii N.E.Br. s.lat. (=Hemming 1829, 1853, 2053 formerly named Pleurostelma sp.)	Asclepiadaceae
90/B	(drift fruits) Barringtonia asiatica (L.) Kurz	Lecythidaceae

	29.5.79 Cut line 2 km. from Sea	
22191	Jatropha sp.aff. arguta Chiov.	
	29.5.79 Coast road 69 km. N. of Obbia	
22192	Dactyloctenium aristatum Link	
3	Commiphora candidula Sprague forma vel sp. aff.	
4	Launaea intybacea (Jacq.) Beauv.	
5	Commelina forskalaei Vahl det. R.B. Faden	
6	Coelachyrum stoloniferum C.E. Hubb. e descr.	Gramineae
7	Digitaria macroblephara (Hack.) Stapf	Gramineae
	29.5.79 coast road 39 km. N. of Obbia	
22198	Tephrosia filiflora Chiov. e descr. et ic	
9	Blepharis ciliaris (L.) B.L. Burtt (B. edulis, B. persica)	
22200	Gynandropsis gynandra (L) Briq. small-flowered form	Capparaceae
1	Heliotropium sp.	
	29.5.79 Coast road 29 km. N. of Obbia	
22202	Cenchrus ciliaris L. (depauperate)	Gramineae
3	Digitaria macroblephara (Hack.) Stapf	
4	Echiochilon sp. (= 22181)	
5	Pentanisia sp. nov. (= 22180)	Rubiaceae
	29.5.79 12 km. N. of Obbia	
22206	Heliotropium longiflorum (DC) Jaub. & Spach	
	29.5.79 On Obbia-Wisil road 21 km. SW. of Obbia	
22207	Sida sp. ? new	Malvaceae
8	Jatropha sp. aff. arguta Chiov (=22191)	
9	Euphorbia cuneata Vahl forma	
22210	Grewia cerasifera (Chiov.) Cuf. e descr. (Yellow fl., sand binder)	
1	Afrotrichloris martinii Chiov.	Gramineae
2	Leptothrium senegalense (Kunth) W.D. Clayton (Latipes senegalensis)	Gramineae
3	Eustachys paspaloides (Vahl) Lanza & Mattei	Gramineae
4/A	Coelachyrum stoloniferum C.E. Hubb e descr.	Gramineae
4/B	Digitaria macroblephara (Hack) Stapf	Gramineae
5	Grewia sp.	
6	Dichrostachys kirkii Benth. (D. benadirensis)	Mimosaceae
7	Leucas sp.	Labiatae
8	Pedaliodiscus sp.	Pedaliaceae
9	Pentatropis spiralis (Forsk.) Decne	Asclepiadaceae
22220	Oldenlandia richardsonioides (K. Sch.) Verdc. var. hirtella (Chiov.) Verdc.	Rubiaceae
1	Tephrosia filiflora Chiov. e descr. et ic.	
2	Hildebrandtia sp. nov. ?	Convolvulaceae
3	Justicia odora (Forsk.) Lam	

22224	Panicum pinifolium Chiov.	Gramineae
5	Cucumis halabadc Chiov. e descr. et ic. (perhaps a ssp. of C. prophetarum)	
6	Littonia sp, not in EAH	
7	Vigna membranacea A. Rich. ssp. hapalantha (Harms) Verdc. (new to Somalia)	
8	Albaca sp.	
9	Aneilema obbiadense Chiov. det. R.B. Faden	
22230	Helichrysum sp. cf. Bally & M. 15986	
1	Vernonia somalensis Franch.	
	30.5.79 Camp site 1 - 2 km. W. of Gawen Village	
22232	Ipomea sp. ?nov. aff. I. jaegeri Pilg. & I. adenioides Schinz	
3	Manilkara mochisia (Bak.)Dubard forma vel sp. aff. (= Bally & Melville 16308)	Sapotaceae
4	Indigofera sparteola Chiov. e descr. et ic.	
5	Possibly Cyperus medusaeus Chiov. ex ic. fl. Som. 1 t 38:2 (1929)	Cyperaceae
6	Cyperus sp.	
7	Oldenlandia richardsonioides (K. Sch.) Verdc. var. hirtella (Chiov.) Verdc	Rubiaceae
8	Helichrysum somalense Bak.	Compositae
9	Premna resinosa Schauer	Verbenaceae
	30.5.79 Slopes and gorge E. of Gawen village; same loc. as 22431 -6	
22240	Acacia horrida (L) Willd. ssp. benadirensis (Chiov.) Hillc. & Bren.	
1	Buxus hildebrandtii Baill	Buxaceae
2	Jatropha arguta Chiov. forma?	
3	Ghikaea speciosa (Rendle) Diels	Scrophulariaceae
4	Caesalpinia erianthera Chiov. forma vel sp. aff.	
5	Meineckia phyllanthoides Baill. ssp somalensis (Pax) Webster	Euphorbiaceae
6	Aystasia drake brockmanii Turrill	Acanthaceae
7	Maytenus undata (Thunb.)Blakelock forma	Celastraceae
8	Ipomea sp.	
9	Conostomium sp. nov.?	
22250	Vepris eugeniifolia (Engl.) Verdoorn (Aeglopsis alexandrae Chiov)	Rutaceae
1	Ecbolium viride (Forsk.) Alston	Acanthaceae
2	Euphorbia matabalensis Pax	
3	Cassia ellisae Brenan	
4	Neuracanthus stolonosus Chiov. e descr	Acanthaceae
5	Barleria proxima Lindau	Acanthaceae
6	Callcanthus albidus (Nied.) Nied.	Malpighiaceae
7	Barleria Waggana Rendle	
8	Pavetta olivifolia Chiov. e descr. et ic. (perhaps a Terenna)	Rubiaceae
9	Polygala sp. not matched in E.A.H.	

22299 Salsola pycnophylla Brenan (flattened'fronds')

22300 Plectranthus sp. Labiatae

1 Euphorbia somalensis Pax var. somalensis

2 Notonia lunulata (Chiov.) Chiov.

3 Momordica spinosa (Gilg) Chiov. Cucurbitaceae

4 Commiphora sennii Chiov. e descr. et ic.

31.5.79 3-8 km. N. of Afgedud

22305 Commiphora playfairii (Hook.f.)Engl. var. benadirensis Chiov. vel aff.

6 Maerua angolensis DC. forma vel sp. aff. (flws. too small)

7 Fagonia ?indica Burm.f. (F. parviflora Poiss.)

31.5.79 23 km. N. of Afgedud

22308 Cassia holosericea Fres.

9 Reseda oligomeroides Schinz Resedaceae

22310 Heliotropium sp. 'A' (= Bally & M. 15475, exerted anthers)

1 Acacia stuhlmannii Taub.

31.5.79 8 km. NW of Holgula

22312 Oldenlandia capitata Brem. Rubiaceaw

3 Hibiscus sect. Bombycella sp. nov.

4 Commiphora oddurensis Chiov. e descr. et ic.

5 Phyllanthus spinosus Chiov. e descr.

6 Acacia paradoxa Chiov. e descr. et ic.

7 Commiphora [illegible]

31.5.79 14 km. N.W. of Do-ol

22318 Commiphora candidula Sprague

9 Commiphora sect. opobalsamum sp. 'E' in EAH

22320 Cissus ellenbeckii Gilg. & Br. forma vel sp. aff.

1 (Courbonia) Maerua edulis (Gilg & Ben.) De Wolf

3.6.79 24 km. S.W. of Galkayo on main Rd.

2

22323 Commicarpus [illegible]formis (Chiov.) Cuf. Nyctaginaceae

4 Acacia aff.A. senegal (L.) Willd. perhaps A. pseudoglaucophylla (Chiov.) Chiov.

5 Commiphora sp. nov. 'hispidicarpus' subsect. Pyracanthoides

6 Commiphora aff. parvifolia (Balf.f.)Engl.

7 Acacia unispinosa (Fiori) Chiov. (perhaps a form of A. senegal (L.) Willd)

8 Farsetia sp. nov. (? = 22071) Cruciferae

3.6.79 30 km. S.W. of Galkayo 2 km. S. of Dagaan on tarmac Rd.

22329 Satanocrater coccinea (S. Moore) Lindau Acanthaceae

22330 Ruellia carnea Balf. f. Acanthaceae

1 Commiphora rostrata Engl.

2 Ochradenus somalensis Bak.f. Resedaceae

22333 Triumfetta actinocarpa S. Moore

4 Jatropha glandulosa Vahl var. glandulosa

5 Melhania denhamii R. Br.

38 km. S. of Galkayo on tarmac rd.

22336 Commiphora probably the male (hitherto unknown) of C. enneaphylla Chiov. but leaflets nearly entire

3.6.79 46 km. S.W. of Galkayo

22337 Diceratella sinuata (Franch.) James Cruciferae

8 Commiphora aff. parvifolia (Balf.f.) Engl.

9 Trichodesma sp. Boraginaceae

22340 Commiphora sp. aff. candidula sprague (=22388)

1/A Jatropha sp.

1/B Hibiscus sect. Bombycella sp.

2 Neuracanthus stoloncsus Chiov. e.descr. Acanthaceae

3.6.79 53 km. S.W. of Galkayo on Chinese Rd.

22343 Euphorbia hadramautica Bak. Pedaliaceae

4 Pterodiscus sp. Pedaliaceae

5 Commiphora sect. Opobalsamum sp. aff. C. horrida Chiov. (=22394)

4.6.79 Camp site 69 km. S.W. of Galkayo on Chinese Rd.

22346 Heliotropium aff. digynum (Gorsk.) Christo (= Hemming 1739)

7 Maerua pseudopetalosa (Gilg. & Ben.) DeWolf (Courbonia virgeta Brongn.)

8 Commiphora gurreh Engl.

4.6.79 89 km. S.W. from Galkayo, 3 km. E. of Ghelins or

22349 Indigofera trita L.f. var. microphylla (Chiov.)

22350 Barleria sect. Acanthoidea sp.

1 Hyalocystis viscosa Hall.f. Convolvulaceae

2 Melhania denhamii R. Br.

3 Cassia senna L. var. obtusata Brenan

4 Dalechampia trifoliata Verdc. & Greenway Euphorbiaceae

5 Glossonema revoilii Franch. Asclepiadaceae

6 Indigofera prob. new subsect. Centrae B

7 Solanum sp. nov. 44 in E.A.H. = Hemming 1521

8 Boerhavia repens L.

4.6.79 113 km. from Galkayo 21 km. S.W. of Ghelinsor

22359 Commiphora candidula sprague vel sp. aff.

22360/A Erythrochlamys leucosphaera Briq. form with broad bracts. Labiatae

22360/B the same, form with narrow bracts

4.6.79 4 km. from Cadaado on Rd. to Baxdo

22361 Commiphora candidula Sprague or ?C. incisa Chiov.

4.6.79 10 km. from Cadaado on Rd. to Baxdo

22362 Commiphora bruceae Chiov.

3 Blepharis linarii folia Pers.

4 Cordia ovalis R. Br. forma vel sp. aff. Boraginaceae

5 Justicia sect. calophanoides sp. (= Paskin H 27)

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22366 Megalochlamys linifolia (Lindau) Lindau Acanthaceae

7 Commicarpus squarrosus (Heimerl) Standley

8/A Leucas minimifolia Chiov.

4.6.79 Gildhis, 15 km. from Adado on Rd. to Baxdo

22368/B Vahlia somalensis Chiov. ssp. goddingii (Bruce) Bridson

9 Leucas abyssinica (Benth.) Briq. var. argyrophylla (Vatke) Sebald (Lasiocorys argtrophylla)

4.6.79 24 km. from Adado on Rd to Baxdo

22370 Dalbergia microphylla Chiov.

4.6.79 27 km. from Adado on Rd. to Baxdo

22371 Pavonia sect. Pterocarpidium sp. nov.

4.6.79 33 km. from Adado on Rd to Baxdo

22372 Hibiscus sect. Bombycella sp. nov. =22341/B

3 Heliotropium sp.

4 Corchorus brichettii Weimark diseased?

5 Commiphora horrida Chiov. e descr.

4.6.79 45 km. from Adado on Rd to Baxdo

22376 Acacia ziziphispina Chiov.

7 Commiphora sp. ? new?

8 Maerua (Courbonia) edulis (Gilg. & Ben.) De Wolf

4.6.79 14 km. E of Baxdo Rd to Bageela

22379 Commiphora sect opobalsamum sp.? new = 22496 aff. C. ancistrophora Chiov.

22380 Solanum jubae Bitter

5.6.79 Camp site 23 km. E. of Baxdo

22381 Dicoma sp. aff. D. gnaphaloides Mattei Compositae

2 Sesamothamnus rivae Engl. Pedaliaceae

3 Jatropha arguta Chiov. (perhaps a form of J. rivae Pax)

4. Reseda oligomeroides Schinz Resedaceae

5 Xylocalyx hispida S. Carter Scrophulariaceae

5.6.79 36.37 km. E. of Baxdo

22386 Euphorbia cuneata Vahl vel sp. aff.

7 Heliotropium subulatum (DC.)Martelli forma vel sp. aff.

8 Commiphora aff. candidula Sprague (= 22340)

5.6.79 43 km. E. of Baxdo

22389 Hibiscus sect. Bombycella ?new(= 22169 & 22313)

22390 Solanum sp. nov. 44 in E.A.H. = Hemming 1521

1 Commiphora sp. aff. enneaphylla Chiov.

2 Acacia paradoxa Chiov. e descr. et ic.

3 Euphorbia polyantha Pax vel sp. aff.

4 Commiphora sect. Opobalsamum aff. C. horrida Chiov.

5 Commiphora oddurensis

6 Commiphora hodai Sprague or oddurensis Chiov.

7 Commiphora aff. parvifolia (Balf. f.)Engl.

8 Commiphora candiduoa Sprague vel sp. aff.

9 Aneilema pusillum Chiov. Commelinaceae

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22400	Seddera spinescens Peter	Compositae
	5.6.79 Bageela 56 km. E. of Baxdo	
22401	Cadaba heterotricha Hook.	
	5.6.79 11 km. E. of Bageela	
2	Jatropha arguta Chiov. (perhaps a form of J.rivae Pax)	
3	Lippia carviodora Meikle	Verbenaceae
4	Ipomoea sultanii Chiov.	
5	Indigofera schimperi Jaub. & Spach forma	
6	Solanum gracilipes Decne e descr. form without prickles	
7	Pterodiscus sp.	
	5.6.79 14 km. E. of Bageela	
22408	Gyroptera gillettii Botsch.	
9	Genus unknown, not matched in E.A.H.	Compositae
22410	Seddera hallieri Engl. & Pilg.	Convolvulaceae
1	Echiochilon sp.	Boraginaceae
	5.6.79 19 km. E. of Bageela	
22412	Commiphora rostrata Engl.	
3	Suaeda micromeris Brenan	Chenopodiaceae
4	Gryoptera somalensis Botsch. e descr.	Chenopodiaceae
	5.6.79 48 km E. of Bageela Camp site	
5	Commiphora playfairii (Oliv.) Engl.	
6	Commiphora candidula Sprague	
7	Jatropha paradoxa (Chiov.) Chiov.	
8	Momordica sessilifolia Cogn.	Cucurbitaceae
9	Endostemon tenuiflorus (Benth) Ashby	Labiatae
22420	Momordica spinosa (Gilg) Chiov. (Kedrostis spinosa)	Cucurbitaceae
1	Barleria sect. Somalia sp.	Acanthaceae
2	Jatropha glandulosa Vahl var. glabra (Muell.Arg.)A. Rade. Sm.	
3	Leucas sp.	
	6.6.79 c. 43 km. E. of Bageela	
22424	Reseda sp.	Resedaceae
5	Cadaba mirabilis Gilg	
6	Euphorbia migiurtinorum Chiov	
7	Lagenantha nogelensis Chiov.	Chenopodiaceae
	6.6.79 13 km. N.W. of Wisil on Galkayo Rd	
22428	Commiphora ? oddurensis Chiov. forma	
9	Adenium somalense Balf. f.	Apocynaceae
	7.6.79 Obbia	
22430	Cassia holosericea Fres.	
	7.6.79 Slopes E. of Gawen on Obbia Wisil Rd. as 22240-82 same loc.	
22431	Eulophia petersii (Rchb.f.) Rchb.f.	Orchidaceae
2	Hildebrandtia africana Vatke	
3	Indigofera trita L.f. var. microphylla (Chiov.)	

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22434	Erythrochlamys sp. nov. aff. E. spectabilis Guerke	Labiatae
5	Strophanthus mirabilis Gilg	Apocynaceae
6	Pentanopsis fragrans Rendle	Rubiaceae
	7.6.79 c. 5 km. W. of Gawen (same area as 22283-6)	
7	Gutenbergia sp. (Herderia somalensis O. Hoffm. vel. aff.)	
8	Pentanisia longipedunculata Verdc. e descr. et ic	Rubiaceae
9	Becium sp.	Labiatae
	7.6.79 8 km. S. of Wisil on Rd to Xarardheere	
22440	Abutilon fruticosum Guill. & Perr.	
1	Svensonia moldenkei Gillett forma vel. sp. aff.	Verbenaceae
2	Gyrocarpus hababensis Chiov. var. angustifolius Verdc.	
3	Crotalaria emarginella Vatke	
	7.6.79 16 km. S. of Wisil	
22444	Conostomium kenyense Brem.	
	7.6.79 c: 20 km. S. of Wisil	
22445	Melhania sp.	
	8.6.79 Camp site 30 km. from Adon Rd. from Wisil	
22446	Cleome parvipetala R.A. Grah.	
7	Jatropha tropaeolifolia Pax	
8	Dasysphaera breviflora Townsend	Amaranthaceae
9	Psilotrichum tomentosum Chiov.	
	8.6.79 20 km. from Adon Rd from Wisil	
22450	Acacia horrida (L.) Willd. ssp. benadirensis (Chiov.) Hillcoat & Brenan0	
1	? Acacia ancistroclada Brenan (new for Somalia)	
2	Acacia laeta Benth.	
3	Acacia senegal (L.) Willd.	
	8.6.79 10 km. from Adon Rd from Wisil	
22454	Commiphora rostrata Engl.	
5	Possibly Cryptolepis migiurtina Chiov.	Asclepiadaceae
6	Ipomoea citrina Hall.f. (enlarged calyx lobes)	Convolvulaceae
7	Albizia obbiadensis (Chiov.) Brenan e descr.	
8	Sarcostemma viminale R. Br.	
9	Cassia ellisae Brenan	
22460	Cadaba longifolia D.C.	
	8.6.79 5 km. from Adon Rd from Wisil	
22461	Solanum robecchii Bitt. & Damm.	
2	Chlorophytum sp. cf. C. parvulum Chiov.	Liliaceae
3	Crotalaria dumosa Franch.	
4	Helinus integrifolius (Lam.) Kuntze	Rhamnaceae
5	Boswellia microphylla Chiov.	
6	Stylochiton sp. perhaps S. grandis N.E. Br.	Araceae
7	Hildebrandtia africana Vatke	

22468	Kirkia sp. undescribed	Simarubaceae
9	Adenia ? aculeata (Hook.f.) Engl.	Passifloraceae
22470	Sarcostemma andongense Hiern	
1	Euphorbia cuneata Vahl	
2	Commiphora erythraea (Ehrenb.) Engl. ?	
3	Vernonia cinerascens Sch. Bip.	
4	Kleinia polychotoma Chiov.	
	8.6.79 Ad (foot of dune)	
22475	Sporobolus spicatus (Vahl) Kunth	Gramineae
6	Commelina albescens Hassk. det. Faden	
7	Alysicarpus glumaceus (Vahl) DC. var. glumaceus	Papilionaceae
8	Hyalocystis Viscosa Hall.f. extreme form or new related species	
9	Corchorus tridens L.	
22480	Citrullus lanatus (Thunb.) Mansfield	Cucurbitaceae
	8.6.79 1 km. from Ad on Rd to Haghadeira	
22481	Stylosanthes suborbiculata Chiov. e descr.	Papilionaceae
2	Heliotropium sp.	Boraginaceae
3	Commelina forskalaei Vahl det. R.B. Faden	
4	Cryptolepis orbicularis Chiov. e descr. et ic.	
5	Corchorus sect. Guazumoides sp. nov.? (= 22630)	
6	Indigofera prob. new subsect Centrae B.	
	8.6.79 2 km. from Ad on Rd to Haghadeira	
22487	Turraea parvifolia Deflers forma vel sp. aff.	
	8.6.79 Mirron 8 km. from Ad	
22488	Leucas sp.	
9	Sterculia rhynchocarpa K. Schum.	
22490	Grewia fallax K. Schum.	
	9.6.79 Camp site 27 km. from Ad on Rd to Haghadeira	
22491	Justicia sect. Rostellaria sp.	
2	Crossandra spinosa Beck	Acanthaceae
3	No specimen	
4	Sansevieria sp.	
	9.6.79 11 km. from Haghadeira on Rd. from Ad	
22493	Heliotropium steudneri Vatke	
4	No specimen	
5	Dichanthium radicans (Lehm.) Clayton	Gramineae
6	Commiphora sect..Opobalsamum sp.? new	
7	Convolvulus steno ladus Chiov. e descr.	
	9.6.79 9 Km N of Haghadeira on Rd from Ad site 72/2	
22498	Cucumis halabarda Chiov. e descr et ic.	
	9.6.79 7 km. N. of Haghadeira on Rd from Ad	
22499	Sebaea grandis (E.Mey.)Steud. forma vel sp. aff.	Gentianaceae

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9.6.79 Coast c 18 km. S. of Xarardhèere

22500 Lycium europaeum L. s. lat.

1 Panicum pinifolium Chiov. Gramineae

9.6.79 c. 3 km. from Sea, S. of Xarardhèere

22502 Indigofera sparteola Chiov. e descr. et ic.

9.6.79 c. 10 km. S. of Xarardhèere

22503 Hildebrandtia sp. nov. (=22222)

10.6.79 Dune 3.5 km. W. of Xarardheere

22504 Heliotropium sp.

5/A Indigofera prob. new subsect Centrae B

5/B Oldenlandia richardsoniana (K. Sch.) Verdc. var. laxiflora (Brem.) Verdc.

6 Tephrosia pumila (Lam.) Pers. forma

7 Cucumis halabarda Chiov. e descr. et ic.

8 Convolvulus ruspolii Hall.f. vergens ad C. hystrix Vahl Convolvulaceae

9 ? Dicoma sp.

22510 Crotalaria sp. nov.aff. saltiana Andr. (=22171)

1 Heliotropium aff. congestum Bak.

2 Ochradenus somalensis Bak.f. Resedaceae

10.6.79 Degan N.W. of Xarardhèere

22513 Tephrosia subtriflora Bak.

10.6.79 6 km. from Degan on Rd to Deir site 66/1

22514 Rhynchosia usambarensis Taub. ssp. inelegans Verdc. new for Somalia

5 Grewia sp.

6 Croton sp. ? new not matched in E.A.H. Euphorbiaceae

7 Aloe hemmingii Reynolds vel aff.

8 Caucanthus albidus (Nied.) Nied. Malpighiaceae

9 Allophylus alnifolius (Bak.) Radlk. Sapridaceae

22520 ? Dichrostachys sp. 'B' of F.T.E.A.?

1 Ochna inermis (Forsk.) Schweinf. Ochnaceae

2 Digitaria macroblephara (Hack.) Stapf Gramineae

3 Adenium somalense Balf.f.

4 Kelleronia obbiadensis Chiov.

5 Cyperus obtusiflorus Vahl Cyperaceae

6 Indigofera trita L.f. var. subulata (Poir.) Ali

7 Afrotrichloris martinii Chiov. Gramineae

10.6.79 12 km. from Degan on Rd. to Deir

22528 Arthrocarpum somalense Hillcoat & Gillett Papilionaceae

9 Gnidia latifolia (Oliv.) Gilg Thymelaeaceae

22530 Tephrosia obbiadensis Chiov.

1 Pergularia daemia (Forsk.) Chiov. Asclepiadaceae

10.6.79 18 km. from Degan on Rd to Deir site 62/1

22532 Lippia sp. aff. somalensis Vatke

22533	Allophylus alnifolius (Bak.) Radlk	
4	Cryptolepis orbicularis Chiov. (= 22484)	Asclepiadaceae
5	Vernonia cinerascens Sch. Bip.	
6	Iphiona rotundifolia Oliv. & Hiern	Compositae
7	Matthiola sp.?new?	Cruciferae
8	Notonia lunulata (Chiov.) Chiov.	
9	Dirachma somalensis Gillett sp. nov. ined.	Dirachmaceae
	11.6.79 near Il Bir Village	
22540	Clerodendron sp. ?new	Verbenaceae
1	Justicia sp. aff. J. flava Vahl	
2	Rhynchosia minima (L.) DC. var nuda (DC.) Kuntze	
3	Dasysphaera breviflora Townsend (known only from the type described this year)	Amaranthaceae
	11.6.79 3 km. W. of Ilbir	
22544	Delonix elata (L.) Gamble	
5	Ormocarpum muricatum Chiov. vel sp. aff.	Papilionaceae
6	Pentanopsis fragrans Rendle	Rubiaceae
7	Pedalium murex L.	Pedaliaceae
	11.6.79 3 km. W. of Dhalwo site 62/2	
22548	Commelina forskalaei Vahl det. Faden	
9	Pentatropis spiralis (Forsk.) Decne	Asclepiadaceae
22550	Coccinia grandis (L.) Voigt	Cucurbitaceae
1	Hibiscus flavifolius Ulbr.	
2	Solanum jubae Bitter (the large species without prickles, often abundant)	
3	Lycium europaeum L. s.lat.	
4	Vincetoxicum linifolium Balf.f. (till now known only from Socrota)	Asclepiadaceae
	11.6.79 1 km. W. of Keinan	
22555	Commiphora rostrata Engl.	
6	Crotalaria laburnifolia L. ssp. laburnifolia	
7	Euphorbia erlangeri Pax	
8	Acacia zizyphispina Chiov.	
9	Commiphora sect Opobalsamum sp.	
22560	Asystasia podostachys C.B. Cl.	Acanthaceae
1	Barleria Sect. Somalia	Acanthaceae
	11.6.79 2 km. W. of Ris	
22562	Cyclocheilon eriantherum Oliv.	Verbenaceae
3	Jatropha glandulosa Vahl var. glandulosa	
4	Helichrysum sp. c.f. Glover & Gilliland 312	Compositae
	11.6.79 7 km. W. of Ris site 73/1	
22565	Phyllanthus spinosus Chiov. e descr.	Euphorbiaceae
	11.6.79 5 km. W. of Gel Hareri site 71/1	
22566	Chascanum gillettii Moldenke	Verbenaceae
7	Echiochilon sp.	
8	Commiphora sect. Commiphora sp.	

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11.6.79 3 km. E. of Bargan

22569 Plicosepalus curviflorus (Oliv.) Van Tiegh. Loranthaceae

11.6.79 9 km. W. of Borgan

22570 Jatropha dichtar Mac Br.

11.6.79 10 km. W. of Bargan site 71/2

22571 Corchorsus brichettii Weimark Ddiseased? Tiliaceae

11.6.79 5 km. W. of Jacar

22572 Commiphora gurreh Engl.

11.6.79 11 km. E. of Jacar

22573 Sida sp. aff. ovata Forsk. = Glover & Gilliland 350 etc.

4 Triumfetta heterocarpa Sprague & Hutch.

11.6.79 6 km. E. of Jacar

22575 Anisotes trisulcus (Vahl) Nees Acanthaceae

12.6.79 3 km. S. of Jacar site 82/1

22576 Terminalia orbicularis Engl. & Diels

7 Ruellia carnea Balf.f.

8 Ipomoea citrina Hall.f.

9 Seddera bracteata Verdc. Convolvulaceae

22580 Grewia erythraea Schweinf.

1 Lannea greenwayi Kokw. (sp. nov.ined.) Anacardiaceae

2 Barleria aff. eranthemoides C.B. Cl.

3 Endostemon Tenuifloris (Benth.) Ashby Labiatae

4 Commiphora sp. aff. madagascariensis Jacq.

12.6.79 17 km. from Jacar

22585 Acacia puccioniana Chiov. e descr. et ic. (not an Acacia genus uncertain possibly Dichrostachys)

12.6.79 Ida Amija dune 9 km. E. of Deri

22586 Pavonia subsect. Ermogeitones ? sp. nov.?

7 Indigofera colutea (Burm.f.) Merr. var colutea

8 Semonvillea angustifolia (Verdc.) - comb nov ined. (Limeum ang. Verdc.) Aizoaceae

12.6.79 3 km. E. of Deri

22589 Gardenia fiorii Chiov.

12.6.79 Deri

22590 Pedalium murex L. Pedaliaceae

12.6.79 3 km. W. of Deri

22591 Neurocanthus ?stolonsus Chiov.

2 Acacia edgeworthii T. Anders

12.6.79 6 km. W. of Deri site 81/1

22593 Boswellia neglecta S. Moore (B.hildebrandtii Engl.)

4 Commiphora sp. (3-foliolate, velvety)

12.6.79 10 km. W. of Deri

22591 Neuracanthus ? stolonosus Chiov. e descr.

12.6.79 8 km. E. of Budbud site 82/1

22595 Cordyla somalensis Gillett Caesalpiniaceae

6 Rhynchosia perhaps R. gansole Chiov. ex ic. or a new sp. aff. R. holtzii Harms

22597 Aneilema pusillum Chiov. det. Faden

8 Commiphora gurreh Engl.

9 Justicia cf minutifolia Chiov.

12.6.79 4 km. E. of Budbud

22600 Givotia gosai Radc. Sm. Euphorbiaceae

1 Gyrocarpus hababensis Chiov. var. angustifolia Verdc.

12.6.79 2 km. W. of Budbud

22602 Vigna macrorhyncha (Harms)Milne-Redh. forma vel sp. nov. aff.

12.6.79 23 km. W. of Budbud

22603 Vigna membranacea A. Risch. ssp. caesia (Chiov.)Verdc.

22604 Platycelyphium voense (Engl.) Wild Papilionaceae

12.6.79 38 km. W.of Budbud

5 Commiphora ?bruceae Chiov. forma?

6/A Commiphora

12.6.79 14 km. SE. of Mukwakori site 74/1

22606/B Commiphora [illegible] sp.

7 Triumfetta actinocarpa S. Moore

13.6.79 Camp site 5 km. W. of Mukwakori site 74/2

22608 Commiphora sect. opobalsamum sp. 'E' in EA.H.

9 Aneilema obbiadense Chiov. (det Faden) var. augustifolium Chiov.

22610 Commelina ? sp. nov. det Faden

1 Uvaria denhardtiana Engl. & Diels Annonaceae

2 Ochna inermis (Forsk.) Schweinf. Ochnaceae

3 Ormocarpum muricatum Chiov, vel sp. nov. aff.

4 Euphorbia cuneata Vahl forma vel sp. nov. aff.

5 Cynanchum hastifolium K. Schum. forma vel sp. nov. aff. Asclepiadaceae

13.6.79 22 km W. of Mukwakori site 74/3

22616 Cynanchum ? falcatum Hutch. & Bruce e descr Asclepiadaceae

7 Sterculia sp.

8 Pterodiscus sp.

9 Adenia ellenbeckii Engl.

22620 Commiphora sect. Opobalsamum sp. ? nov.?

1 Caesalpinia erianthera Chiov. forma vel sp. nov. aff.

2 Cordeauxia ? sp. nov.

13.6.79 30 km. W. of Mukwakori

22623 Mundulea sericea (Willd.) A. Chev. Papilionaceae

4 Bottegoa insignis Chiov. Sapindaceae

13.6.79 Plateau edge 23 km. E. of main tarmac Rd.

22625 Indigofera prob. new subsect Centrae A

6 Commiphora ? hildebrandtii (Engl.)Engl. (?C. ogadensis Chiov.) (not C. hildebrandtii sensu Drake-Brockman)=22591

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13.6.79 4 km. W. of Aburei site 75/1

22627 Commiphora africana(A.Rich.)Engl. var rabriflora(Engl.)Wild

8 Boswellia bricchettii (Chiov.) Chiov. (perhaps a form of B. michrophylla)

9. Ocimum tomentosum Oliv. Labiatae

13.6.79 5 km. E. of Tarmac Rd

22630 Corchorus sect. Guasumoides sp. nov. ?(= 22485)

13.6.79 km. N. of Bulo Berti on main tarmac Rd.

22631 Heliotropium sp.

13.6.79 30 km. S. of Bulo Berti on main Rd site 78/1

22632 Vatovaea pseudolablab (Harms) Gillett Papilionaceae

3 Duosperma sp. Acanthaceae

4 Caesalpinia trothae Harms ssp. erlangeri (Harms) Brenan

5 Euphorbia glochidiata Pax

13.6.79 38 km. S. of Bulo Berti on main Rd site 83/1

22636 Commiphora sp.?=22685

7 Acacia zanzibarica (S. Moore) Taub. var. microphylla Brenan

13.6.79 45 km. S. of Bulo Berti on main Rd site 77/1

22638

9 Commiphora perhaps a glabrous form of C. atramentaria Chiov.

22640 Commiphora playfairii (Hook.f.) Engl. var benadirensis Chiov.

1[illegible] Corallocarpus epigaeus (Rottl.) C.B.Clarke Cucurbitaceae

2 Euphorbia gossypina Pax

3 Adenia allenbeckii Harms

4 Crotalaria pycnostachys Benth.

15.6.79 5 km. W. of Mogadiscio-Bulo Berti Rd 74 km. N. of Johar 3°27'N, 45°29'E site 77/2

22645 Commelina albescens Hassk. det. Faden

6 Launaea hafunensis Chiov.(? young plants not yet hardened)

7 Heliotropium sp. = Gilbert 2136

8 Solanum somalense Franch. var. parvifrons Bitter

9 Commiphora = 22639

22650 Commiphora sennii Chiov. e descr. et ic.

1 Acacia horrida (L.) Willd. ssp. benadirensis (Chiov.) Hillc. & Brenan

15.6.79 El Dem 3°29'N, 45°29'E

22652 Amaranthus sparganiocephalus Thell.

3 Beerhavia erecta L. (not prev. rec. from Somalia)

4 Commiphora sp. aff. oddurensis Chiov.

15.6.79 3°30'N, 45°30'E

22655 Commiphora

6 Commiphora ?ellenbeckii Engl.?

7

306

15.6.79 5 km. W. of Bujwein 3°35'N, 45°31'E site 78/2

22657 Cissus sp. nov.'A' (=Hemming 1508, Bally 9516, Gillett 21212)

8 Commiphora sp. ?= 22636

9 Tetrapogon tenellus (Roxb.) Chiov. Gramineae

15.6.79 18 km. N.W. of Bulo Berti 3°56'N, 45°25'E site 79/1

22660 Eriochloa fatmensia (Hochst. & Steud.) Clayton (E. nubica) Gramineae

1 Diceratella sinuata (Franch.) James Cruciferae

3 Ocimum sp. Labiatae

15.6.79 53 km. N.W. of Bulo Berti 4°7'N, 45°12'E site 33/1

4 Aloe ruspoliana Bak.

5 Commiphora sp. 'K' in E.A.H. see 21971 = Gillett 13029

6 Leucas abyssinica (Benth.) Briq. var. argyrophylla (Vatke) Scbald

7 Indigofera spiniflora Boiss.

8 Ocimum tomentosum Oliv. Labiatae

9 Commiphora gurreh Engl.

15.6.79 Wabki 4°8'N, 45°12'E

22670 Barleria longissima Lindau

16.6.79 Camp site 5 km. W. of Beled Wein site 70/2

22671 Indigofera schimperi Jaub. & Spach forma

2 Pavonia glechomifolia (A.Rich.) Garcke vergens ad P. haematophthalmos (Chiov.)

3 Pavonia propinqua Garcke

16.6.79 8 km. W. of Beled Wein site 58/1

22674 Polygala senensis Kl. var. somalensis (Chiov.) Cuf. e descr. ?

5 Commiphora sp. nov. with stellate hairs !

6 Pluchea sarcophylla Chiov. Compositae

7 Ormocarpum keniense Gillett

8 Jatropha robecchii Pax forma vel sp. aff.

9 Seddeaa cinerea Hutch. & Bruce vel sp. aff. Convolvulaceae

22680 Euphorbia inaequispina N.E.Br.

1 Euphorbia glochidiata Pax

16.6.79 17 km. W. of Beled Wein site 59/2

22682 Cordia Suckertii Chiov. var. exasperata Verdc. (large flowers)

3 Adenia ellenbeckii Engl.

4 Lannea triphylla (A. Rich.) Engl.

5 Commiphora crenulata (A.Terr.)Chiov. or C. sennii Chiov. ?

16.6.79 main Rd 26 km. N.E. of Beled Wein site 68/1

22686 Hibiscus

7 Terminalia polycarpa Engl. & Diels (T. Kelleri)

8 Striga gesnericides (Willd.) Vatke Scrophulariaceae

9 Berchemia discolor (Klotzsch) Hemsl. Rhamnaceae

22690 Commiphora lughensis Chiov. forma vel sp. aff. e descr.

1 Commiphora? hildebrandtii Engl. ogadensis Chiov. = 22626

2 Solanum jubae Bitter

3 Momordica sessilifolia Cogn. Cucurbitaceae

4 Tribulus terrestria L. forma vel sp. aff.

5 Pavonia patens (Andr.) Chiov.

6 Adenia aculeata (Hook.f.) Engl.

7 Commiphora sp. resembling C. gurreh Engl.

16.6.79 main Rd & 1 km. S.W. of Mataban site 67/1

22698 Barleria hochstetteri Nees sensu D. Napper, cf. B. glandulifera Lindau

16.679 main Rd 7 km. S.W. of Mataban site 66/1

22699 Justicia cf minutifolia Chiov.

22700 Commiphora aff parvifolia (Balf.f.) Engl.

1 Commiphora sp. 'K' in E.A.H.

16.6.79 main Rd 10 km. N.E. of Mataban site 34/1

2 Cordeauxia edulis Hemsl.

3 Cordia ovalis R.Br. forma vel sp. aff.

4 Acacia bricchettiana Chiov. (A. gloveri Brenan)

J.B. Gillett
for BOTANIST IN CHARGE

APPENDIX 1.04 - PART 1

CONTRACT 1

Range Vegetation Mapping

THIS AGREEMENT is made between DR. ABDULAHI AHMED KARANI OF THE NATIONAL RANGE AGENCY, known hereafter as the GOVERNMENT, of the one part,
AND RESOURCE MANAGEMENT & RESEARCH, as represented by DOCTOR ROBERT MURRAY WATSON, known hereafter as the CONSULTANTS, of the other part,
on the seventeenth day of OCTOBER nineteen hundred and seventy eight,

WHEREBY THE CONSULTANTS on the one part undertake to:

1. Start work within 10 days of signing the contract;
2. Carry out a range vegetation survey in the Central Rangelands of Somalia, which shall be defined as the area indicated on the attached map; (shown as figure 1.21)
3. Employ the methods described on pages two and three of the paper "A proposal for a survey of resources in the Central Rangelands of Somalia", which is an attached part of this contract
4. Make a land-system map, and a range vegetation map at 1:100,000 scale;
5. Provide two copies in clear acetate of the land system/ range vegetation map mentioned in clause 4. The layout of map sheets shall conform with that of the current topographic series, and the scale shall be 1:100,000.

6. Provide two hundred copies of a monochrome range vegetation/ land systems map at 1:100,000 scale, which shall show the position of sites where range vegetation and soils were investigated. The layout of the map sheets shall be the same as that specified in clause 5.

7. Provide 100 copies of a text describing the features of the land-systems and range vegetation units, to explain the maps cited in clauses 5 and 6. The text report will include outline diagrams of the land-systems, showing the units of the systems and their inter-ralationships. Land units will be grouped into pasture units for the purpose of pasture management.

8. Provide 100 copies of an appendix which will include: - a tabulation of range vegetation types according to their condition, which can be used as a field key;
- the detailed results of the investigations of vegetation and soils at selected sites.

9. Provide 3 herbarium mounted specimens for all the important plants found in the Project Area.

10. Complete the field work part of the programme within four months of starting flying;

11. Deliver the maps and reports specified in clauses 5, 6, 7, 8 and 9 within six month of starting flying;

12. Select four Somali personnel from those submitted by the NRA for further resource survey and management

training at ITC, Enschede, The Netherlands, and assist the NRA in placing those personnel in appropriate courses.

AND THE GOVERNMENT, on the other part, agrees to:

13. Provide 20 sealed 200 litre drums of 100L grade aviation fuel at GAALKACYO Airport, arrange for this before the commencement of the flying programme, and delegate the security of this fuel to some responsible person at the site;

14. Obtain and furnish to the consultants all clearances necessary from the Department of Civil Aviation, from the Military authorities, and from any other concerned parties, for the consultants' aircraft to enter and operate in the prescribed manner in Somali;

15. Obtain and furnish to the consultants all visas and other clearances necessary from the Department of Immigration for the consultants and their staff to enter and work in Somalia;

16. Pay all the fees due to the Civil Aviation Department in respect of landing fees, parking fees, navigational charges, and any other charges raised by the said Department in respect of the aircraft used in the survey;

17. Pay the costs of visas and work permits, and any other charges raised by the Department of Immigration, in respect of the consultants' personnel working on the survey;

18. Obtain Customs clearance for duty-free importation of

aircraft, vehicles and other equipment used by the cnnsultants for the survey, provided it is re-exported at the end of the survey;

19. Pay any deposits or bonds required by the Customs authorities in respect of granting duty-free importation of equipment to be used in the survey;..

20. Pay the consultants the sum of fiftyeight thousand one hundred and thirty nine dollars. This payment shall cover all the consultants' fees and costs, and no other expense will be liable for payment by the Government, except those specified in clauses 16, 17 and 19. This payment shall not be liable to Somali income tax.

21. Make these payments according to the following schedule:

a) Fifteen thousand United States dollars on signing of the cnntract;

b) Fifteen thousand United States dollars not more than five days after the arrival of the consultants' aircraft in Somalia;

c) Fifteen thousand United States dollars not more than five days after completion of the field work;

d) The balance (Thirteen thousand one hundred and thirty nine United States dollars) not more than ten days after the delivery of the maps and reports specified in clauses 5, 6, 7, 8 and 9.

22. Make these payments from confirmed letters of credit established at prime banks in Switzerland. These letters of credit will be established and confirmed before the contract is signed;
Alternatively payments may be made against invoices submitted by the consultants, provided the cnnsultants are in receipt of copies of letters between the IBRD in Washington and the National Range Agency confirming that funds are held in Washington for payments according to the schedule specified in clause 21.
These invoices will be paid not more than 30 days from receipt.

AND BOTH PARTIES AGREE THAT:

23. Force majeure

a) Either party will not be required to carry out the whole or part of its obligations under this Agreement if one or more force majeure situations, as defined hereunder, prevent it absolutely from performing its obligations;

b) In this agreement only the following occurences shall be cases of force majeure situations;

i. The unforeseeable act of a third party for whom either party is not responsible, or who is not under its supervision or control; or

ii. An official prohibition preventing the performance of its obligations; or

iii. A natural catastrophe such as an earthquake, lightening or aircraft accident; or

iv. International or civil war;

c) The party prevented by a force majeure situation from performing its obligations under this contract shall notify the other party in writing of the occurence of one or more of the situations stated in this clause 23 within twenty days after the happening. In the absence of such timely notification force majeure shall not absolve the invoking party from carrying out its obligation;

d) Should the force majeure situation continue for more than twelve weeks this contract shall be deemed terminated.

APPENDIX 1.04 - PART 2

CONTRACT 2

Livestock and population survey

THIS AGREEMENT is made between DR. ABDULAHI AHMED KARANI OF THE NATIONAL RANGE AGENCY, known hereafter as the GOVERNMENT, of the one part,

AND RESOURCE MANAGEMENT AND RESEARCH, as represented by DOCTOR ROBERT MURRAY WATSON, known hereafter as the CONSULTANTS, of the other part, on the seventeenth day of October nineteen hundred and seventy eight,

WHEREBY THE CONSULTANTS on the one part undertake to:

1. Start work within 10 days of signing the contract;
2. Carry out an aerial census of livestock in the Central Rangelands of Somalia, which shall be defined as the area indicated on the attached map; (shown as figure 1.21).
3. Employ the methods described in Volume 02 of the consultants' report submitted to the Sudan Government's Ministry of Agriculture Food and Natural Resources, as part of the Sudan National Livestock Census and Resource Inventory of 1975 - 1977. This volume is attached as a part of this contract;
4. Provide estimates and standard errors for cattle, sheep, goats, camels, donkeys, horses, mules, wildlife species, surface water sources of different types, houses and buildings of different types excepting military installations, people, different categories of land-use, and major crops, for each unit of the land system;
5. Undertake the survey twice, once in the wet season and once in the dry season;

6. Provide fourty copies of sets of tables which show for each stratum, and for the whole survey area, densities, estimates and standard errors for the numbers of cattle, sheeps, goats, camels, donkeys, horses, mules, wildlife species, different types of surface water sources, different types of houses and buildings excepting military installations, people, livestock enclosures, and areas of different types of land use, and of major crops, for each of the two surveys;

7. Provide fourty copies of monochrone maps at 1:1,000,000 scale showing the distributions of cattle, sheep, goats, camels, livestock biomass, wildlife biomass, total biomass, people, and land-use categories, for each of the two surveys, and the principal features of the system of livestock migrations.

8. Provide fourty copies of a report describing the methods of the survey, and of the operational details and calibration data, for each of the two surveys;

9. Complete the field work part of the programme within nine months of starting flying, undertaking the wet and dry season surveys in successive seasons;

10. Deliver the maps and reports specified in clauses 6, 7 and 8 within eleven month of starting flying;

11. Select four Somali personnel from those submitted by the NRA for further resource survey and management training at ITC, Enschede, The Netherlands, and assist the NRA in placing those personnel in appropriate courses.

AND THE GOVERNMENT, on the other part, agrees to:

12. Provide 110 sealed 200 litre drums of 100L grade aviation fuel according to the following schedule:

    - 30 drums at M
    - 80 drums at GAALKACYO

    ensure this fuel is arranged for two weeks before the commencement of the flying programme, and delegate the security of this fuel to some responsible person at the site;

13. Obtain and furnish to the consultants all clearances necessary from the Department of Civil Aviation, from the Military authorities, and from any other concerned parties, for the consultants' aircraft to enter and operate in the prescribed manner in Somalia;

14. Obtain and furnish to the consultants all visas and other clearances necessary from the Department of Immigration for the consultants and their staff to enter and work in Somalia;

15. Pay all the fees due to the Civil Aviation Department in respect of landing fees, parking fees, navigational charges, and any other charges raised by the said Department in respect of the aircraft used in the survey;

16. Pay the costs of visas and work permits, and any other charges raised by the Department of Immigration, in respect of the consultants' personnel working on the survey;

17. Obtain Customs clearance for duty-free importation of aircraft, vehicles and other equipment used by the consultants for the survey, provided it is re-exported at the end of the survey;

AND BOTH PARTIES AGREE THAT:

22. Force majeure

a) Either party will not be required to carry out the whole or part of its obligations under this Agreement if one or more force majeure situations, as defined hereunder, prevent it absolutely from performing its obligations;

b) In this agreement only the following occurences shall be cases of force majeure situations:

i. The unforeseeable act of a third party for whom either party is not responsible, or who is not under its supervision or control; or

ii. An official prohibition preventing the performance of its obligations; or

iii. A natural catastrophe such as an earthquake, lightening or aircraft accident; or

iv. International or civil war;

c) The party prevented by a force majeure situation from performing its obligations under this contract shall notify the other party in writing of the occurence of one or more of the situations stated in this clause 22 within twenty days after the happening. In the absence of such timely notification force majeure shall not absolve the invoking party from carrying out its obligation;

d) Should the force majeure situation continue for more than twelve weeks this contract shall be deemed terminated.

APPENDIX 1.05

A PROPOSAL FOR A SURVEY OF RESOURCES IN THE CENTRAL RANGELANDS OF SOMALIA

R.M.Watson, M.A., Ph.D.(Cantab.),
RESOURCE MANAGEMENT AND RESEARCH,
16B West Central Street,
LONDON WC1

17.4.78

Modified 14.7.78
and on 5.9.78

INTRODUCTION

This proposal has been prepared as a follow-up of our earlier paper "Resource Surveying for Somalia: Some Proposals". It represents a specific programme of survey work, and draft contracts are attached. Resource Management and Research is in a position to undertake this work immediately: the first possible survey of range vegetation would be during and immediately after the first rains of 1979. The most appropriate timings for the two livestock and human surveys would be September-November 1978 and April-May 1979 (assuming normal patterns of rainfall). In the final event of course it will be necessary to adjust these dates so that one survey is of an extreme dry season distribution, and the other of an extreme wet season distribution.

Our original proposal has been made more specific following discussions between Watson and Dr.David Wilcox of the IBRD. The survey area has been defined approximately as that region demarcated on the maps attached to the draft contract: it covers approximately 150,000 km^2.

It is appreciated that it is difficult to be entirely specific about a survey programme before holding discussions with clients at the site of the survey, and before inspecting currently available information. Equally it is not possible to predict at this stage the sort of skills, assistance and local knowledge which would be available.

Therefore we have drawn upon our experience in neighbouring countries in similar climatic regimes; we have reviewed the limited scientific literature of the region; and we have discussed the problems with scientific investigators who have

worked in Central Somalia. Nevertheless we retain sufficient flexibility to make the best use of information and skills which is available in Somalia, but at present unknown to us.

THE RANGE VEGETATION MAP

Methods

Resource Management and Research would employ the following method in this part of the survey:

i) Transparencies of the current topographical maps of a scale 1:100,000 will be combined with the enhanced LANDSAT images at 1:250,000, and a preliminary land systems map drafted. (IBRD have agreed to provide both the current maps and the LANDSAT imagery: it will be important to ensure that the imagery is of scenes showing maximum vegetation development, ie. after heavy rains. It may be revealing to compare wet-season scenes with dry season scenes before finally selecting the most appropriate LANDSAT sources. This point is expanded later.

ii) The most recent air photographs which can be obtained (probably the HTS photography) will be examined and interpreted to give refinements to the drafted land systems map, and in particular to provide a draft range vegetation map.

iii) The draft maps, and the base data (LANDSAT imagery and air photographs) will be annotated from the aircraft using the techniques first used by WATSON and HEMMING in South Turkana District, making landings where possible to make structural descriptions of the vegetation, and reconnaissance evaluations

of soils. Sites at which landings are not possible will be marked, and these will be visited on the ground.

iv) This annotation can be expected to reveal approximately 75 land system units. Specimen sites (some visited by the aircraft, some on the ground with four-wheel drive vehicles) will be selected in these units, at which comprehensive examination and description of the vegetation will be made, including the identification of the principal species, and of any species providing a significant element in the herbivore food supply. The geomorphology and soils of the units will be described from data collected at the specimen sites, including soil depths, colour, texture, pH, and other reconnaissance data judged to be relevant for future management decisions. In addition the trends and potentials of the land system units influencing both primary and secondary productivity levels, as deduced from examination of sites on the ground, and from the aerial reconnaissance, and interviews with pastoralists, will be determined. It is expected that 300 to 400 sites will be investigated.

Products

This study would end in the following products being delivered to the Somali authorities:

i) Two clear acetate maps at 1:100,000 scale, suitable for preparation of prints, depicting range vegetation superimposed over land system units. The maps will include the main cultural and topographic features taken from the current mapping, and additional data derived from aerial reconnaissance.

ii) A text report (100 copies) describing the features of the land system units and the range vegetation units to accompany the aforementioned maps. The appendix to this report will include the detailed site descriptions set out in standardised form, and the ecological trends and potentials observed. Land systems will be described in terms of geology, geomorphology, soils, vegetation, current utilisation patterns and probable ecological tends. The text will include simple outline diagrams of the land systems, which show the units making up the systems, and indicate the relative size of units, and their interrelationships with other units, both within and without the land system. The land systems will be grouped into pasture units of potential management value.

iii) Two hundred copies of 1:100,000 black and white maps confirming with the current topographical sheets of the Project Area, showing the land systems and range vegetation, the pasture lands, cultural and topographic features, and positions of the specimen sites examined on the ground.

iv) A tabulation (100 copies) of the vegetation structure (in terms of species abundance and condition) and associated rangeland characteristics for the different range vegetation types, showing how each type appears over the range of possible conditions from good to poor. This tabulation will be designed to be used as a field key, enabling field assistants to rapidly determine the condition and classification of the range, and to monitor trends in condition.

v) Specimens for herabarium use of all the important plant species found in the survey area will be prepared, mounted and identified. This heraarium collection will be given to the NRA (3 specimen sheets for all species).

vi) RMR will select suitable personnel for training at ITC in the Netherlands in appropriate resource surveying techniques, and assist the NRA in arrange for these personnel to take courses at this Institute.

Personnel

Eco-pilot, project manager

Dr.R.M.WATSON, M.A., Ph.D. His biographical details can be seen in the attached hand-out.

Range ecologist.

J.BECKETT, B.Sc.

Mr.BECKETT graduated in Botany at the University of Hull, and has worked for Resource Management and Research since 1975. He has worked in 1975-77 on the Sudan Livestock Census and Resource Inventory for the Veterinary Research Administration of the Sudan Government. In 1977 he was sub-contracted to work on the South Kordofan Development Project for Agrar and Hydrotechnik of Essen, Germany, assessing patterns of land-use and range conditions. He spent two month of 1976 working on the Pilot Forest Inventory of the Loka Region of Eastern Equatoria Province of Sudan, for the Sudan Forest Department.

Consultant Range ecologist

C.HEMMING, B.Sc.

Mr. HEMMING is one of the most experienced ecologists with field experience covering most of Somalia, and many of the neighbouring

countries. If the Centre of Overseas Pest Research can be persuaded to release him for one month it is intended to perform the aerial annotation and initial site examinations with HEMMING. In order to secure the release of HEMMING from the C.O.P.R. a request must be made by the Somali Government or the World Bank. One of the chief advantages of having HEMMING's experience is to be seen in being able to relate the land-systems and range vegetation classifications to areas of Somalia beyond the limits of the survey area. This will be advantageous if it is intended to extend range investigations and developments to other parts of Somalia.

DRY AND WET SEASON SURVEYS OF LIVESTOCK, PEOPLE, SURFACE WATER, LAND USE, CROP PRODUCTION AND WILDLIFE

Methods

Detailed descriptions of the method have been made in reports submitted to other Governments, and are the subject of a book at present under preparation. The essential steps of the method are:

i) Stratification. This is an integral part of the preparation of a range vegetation and land-systems map. This has been described above. The land-systems units become the strata for the livestock census.

ii) Survey flying. An appropriately equipped light aircraft is flown over each stratum in such a way as to cover statistically representative strip samples. Records are made on each strip, using 35 mm colour photography, tape and video recorders, of all livestock, wild animals, houses and buildings of different types, excepting military installations, livestock enclosures,

surface water sources, land-use and crop production features, and vegetation cover characteristics.

iii) Analysis and computation. Data is transferred from tapes and film to computer forms, and analysed to produce, for each stratum separately and for the whole survey area, the numbers of each livestock type, of each wild animal species, of houses and buildings of distinguishable types excepting military installations, of livestock enclosures, of each type of surface water source, and the areas under different categories of land-use, and of the major crop areas. These numbers and areas are corrected for bias (see iv) below), and the estimates have standard errors not exceeding 7% for cattle, and 10% for sheep, goats and camels. These analyses also provide information on distributions in the forms of maps and tables, showing, for each stratum, densities of livestock and wild herbivore species, houses and buildings, water sources, livestock enclosures, and the percentages of land under various types of land-use and major crops.

iv) Bias corrections. During the course of survey flying a calibration approach is used to give estimates of bias in the estimations, and these correction factors are incorporated in the computational stage of the work.

v) Seasonal aspects. Surveys are carried out in the wet season and dry season to provide data illustrating the seasonal shifts in the patterns of land use by man and animals.

Products

This study would end in the following products being delivered to the Somali authorities:

i) Fourty copies of sets of tables giving the densities and estimates for each stratum and for the whole survey area, of cattle, sheep, goats, camels, donkeys, horses and mules, buildings and houses, livestock enclosures, different types of water-sources, land use categories, principal crops, and the larger wildlife species. One set of tables will be the product of the dry season; another will be made for the wet reason results.

ii) Fourty copies of maps at 1:1,000,000 scale showing the distributions of cattle, sheep, goats, camels, livestock biomass, wildlife biomass, total biomass, people (see iii below), land-use categories, and surface water source densities, for wet and dry season surveys.

iii) Fourty copies of a set of tables giving the densities and estimates for each stratum and for the whole survey area, of people, in both the dry and wet seasons. These human numbers will be deduced from mean house occupation rates which will be established from a sampling of houses encountered during the survey of range vegetation.

iv) Fourty copies of a report describing the methods of the survey, and the operational details and calibration data, for the wet and dry season surveys.

v) Fourty copies of maps at 1:1,000,000 scale showing the principal routes of migration of livestock species, and a generalised migration calendar for the surveyed region.

vi) NMR will select suitable personnel for training at ITC in the Netherlands in appropriate resource surveying techniques and assist the NRA in arranging for these personnel to take courses at this Institute.

Personnel

Eco-pilot, project manager.

Dr.R.M.WATSON, M.A., Ph.D. His biographical details can be seen in the attached paper.

Eco-pilot, operations manager.

Capt.C.I.TIPPETT. His biographical details can be seen in the attached paper.

Computer specialist.

Dr. Faisal RIZK. Dr. RIZK is an experienced computer scientist who has worked with Resource Management and Research since 1974. He designed the computer programmes and data processing systems for the Sudan National LIvestock Census and Resource Inventory, carried out for the Government of Sudan, and for the Jebel Marra Survey, carried out for Hunting Technical Services and the United Nations Development Programme. Before joining RMR, RIZK worked for the United Nations on the Sudan Population Census.

Ecologist, biometrician.

J.BECKETT, B.Sc. His biographical details are given on page 4 of this proposal.

Statistician.

F.JOLLY,B.Sc. Miss JOLLY qualified in statistics at Edingurgh University in 1976, and since then has worked as a statistician on the Sudan National Livestock Census and Resource Inventory for the Government of Sudan, and for Field Surveys (Scotland) Ltd.

APPENDIX 1.05 -

Resource Management & Research.

16B West Central St .,
London W.C. 1,

National Range Agency,
P.O.Box 1759,
MOGADISHU. SOMALIA.

20 May 1979

Attn. Abdullahi Ahmed Karani

Dear Dr. Karani,

MAP SCALES FOR FINAL REPORT

I have been reviewing the map scales for the final report, and discussing the possible uses of these with Mr.Field, the Technical Manager.

We are in agreement that the 1:1,000,000 scale map (of which I have given you and Mr.Field a specimen) is appropriate for presenting livestock data and information on people, cropping and water sources.

However the range vegetation map, which is specified in the Contract at 1:100,000 is probably not suitable for use in the field by your follow-up teams, since it covers 90 separate sheets. Moreover the overall homogeneity of the vegetation makes this scale rather on the small side for useful mapping.

We have considered this problem and can offer the following solutions:

1- i) We will deliver one acetate copy at 1:100,000 scale of the range vegetation map. This can then be printed conveniently and cheaply by yourselves on a Dye-line machine as and when you need copies. Since this scale is more appropriate for detailed project planning you will find that you need to make copies of only a few sheets.

ii) We will deliver one acetate copy at 1:200,000 scale of the range vegetation map. This is the scale at which the map will be most useful and when the copies we provide are exhausted you will be able to make more with a Dye-line printer.

iii) We will also deliver 200 copies of this 1:200,000 map printed on bond paper.

This variation of clauses 5) and 6) of Contract 1. will provide you with a more useful product and in the circumstances we are prepared to bear any increase in costs which might arise from changing the map scales as suggested.

However before we go ahead perhaps you could let us know if you find this change acceptable.

Yours sincerely,

R.M. Watson.

c.c. David Field, Technical Manager, N.R.A.

APPENDIX 1.05 -

National Range Agency

P.O.Box 1759

Mogadishu - Somalia

Ref: P/80/d-14/4/445/79

Dear Dr. Watson,

Map Scales for final Report

With reference to your letter dated 20 May 79 concerning the above subject, we have discussed the points you raised and find no basic objection to the proposals you have made modifying clauses 5 and 6 of contract. However we request two modifications:-

a) Where you mention a scale of 1:200,000 in your letter this should be substituted by 1:250,000 since this fits in with universally used scales.

b) In case of damage we request two copies of acetate. With these amendments we therefore agree that you will supply us with:

1. Two acetate copies of each 1:100,000 scale sheet of the range vegetation map.
2. Two acetate copies of each 1:250,000 scale sheet of the range vegetation map.
3. 200 copies of each 1:250,000 scale sheet of the range vegetation map printed on bond paper.

These modifications to the original contract will not alter the total cost.

Your sincerely

Dr. Abdullahi Ahmed Karani
General Manager N. R. A.

To: R.M. Watson
Resource Management & Research
16B West Central St .
LONDON W.C. 1,

APPENDIX 1.06

CENTRAL RANGELANDS STUDIES AND SURVEYS AN IMPORTANT PROBLEM

Resource Management and Research have been carrying out studies in the Central Rangelands since November 1978. During this time they have been making extensive use of the 1:100,000 survey department maps, which are of excellent quality, and more or less indispensible for field work. At the start of the survey the RMR team were given a set of the 1:100,000 maps. It was soon appreciated that several copies of these maps would be necessary if the team were to work efficiently, and accordingly RMR made colour copies on their Xerox colour copier. An example of a colour copied map is attached to this paper.

Now that RMR are handing over their survey reports and other results it occurs to us that many more 1:100,000 map sheets will be needed by the large numbers of experts and field personnel who will be working on the project in the next six years. If it is not possible to obtain more map sheets from the limited numbers held by the Military Authorities, then more copies should be made and placed in the stores of the Central Rangeland Project, to be issued to its field staff as appropriate. It would be reasonable to expect a minimum need for ten copies of each map sheet, even if extreme care were to be exercised in issuing the maps; twenty copies would be a more realistic view of the projects needs. The cost of copying, trimming and assembling one map sheet is about $9. For ten copies the unit cost falls to $7.50: for twenty copies the unit price falls further to $6.50. For the Central Rangelands project area the costs of one complete set of maps would be $668 (for the 87 map sheets). Ten sets would cost $5570 (ie $557 per set) and twenty sets would cost $9660 (ie $483 per set).

These costs could possibly be found from the P042 funds, which still stand at about $ 28,000 uncommitted). It is of course possible to make copies of the other 1:100,000 survey maps. The Northern Rangeland maps, for example will also be required in some numbers.

These costs are not excessive when the costs of field work are taken into account. Hunting Technical Services have informed me that they have a query for the purchase of their 20 year old 1:40,000 and 1:60,000 photography. They and we agree that the present 1:100,000 survey mapping is a much superior source of information for use in the field. Indeed Mr. PIPER of HTS was appalled that any expenditure of money was envisaged for these photographs, with such excellent alternative mapping available. It should be appreciated that the photograph itself will reveal little to the inexperienced eye, and much time must be spent is stereoscopic examination, for example, to make even an appreciation of the relief. On the other hand the survey dept. maps have 10m contours plotted on them; as well as a full interpretation of tracks, drainage lines, cultural features, etc. At 1:40,000 a total of 75 photographs would be required to cover the area of one of the survey department 1:100,000 maps, and at 1:60,000 scale 33 photographs would be needed. Current costs of these sorts of prints is not less than $2 each, giving equivalent costs of $ 150 and $66 per map sheet.

And a further arguement against the purchase of this old photography is the existence of increasingly useful LANDSAT imagery, with better and better resolution. RMR have made some trial colour copies of this imagery, which is attached to this paper. Although much less useful than the maps they could form a useful additional source of information for field workers, to be used in conjunction with the maps. The cost of creating 1:250,000 sheets of 1° x 1° from the LANDSAT imagery

would be the same as the costs of map copying. We are still experimenting with the colour balances needed for the most revealing reproduction of the imagery prints, and can improve on the example attached.

If either of these products is of interest NMR are in a position to make colour prints immediately at present. Next year it may be more difficult to reserve time on the machine.

R.M.WATSON

29.9.79

NB. Prices subject to change if Rank Xerox alter their charges.

APPENDIX 1.07

FROM RMR

10 AUGUST 1979

Dr.J.Nossin,

Director of the Department of Integrated Surveys,

ITC.;

Enschede

NETHERLANDS

Dear Jan,

I am writing to inform you of what seems to be an excellent opportunity to create a training programme in Somalia for a large rangelands project. There appear to be possibilities that such a programme could be extended to have a regional role in the future.

We have just finished the field work over about 140,000 km^2 of the Central Rangelands, and continue now in the north over a similar area, in mapping and establishing resource base-lines. An IBRD team now moves in to devise ways of using these rangelands more effectively, and to improve socio-economic conditions in the area. Although some training is already envisaged in the World Bank plan, it will be undertaken outside Somalia, and will involve traditional range-management types of courses in various Universities and Institutes. I have, as you know, been sceptical about the value of this type of training for some time. In our experience it has three chief drawbacks:

i) Those trained learn more about urban industrial lifestyles than about range management, and many never return to their original country if ways can be found for them to continue in professional work in developed countries,

ii) Those who do return are determined not to leave the capital city (or other urban centres) for the range areas. Furthermore, with qualifications in range management, they are, ironically, well equiped in the political sense to avoid any uncongenial postings. They are therefore immediately "lost" from the point of view of adding their skills in the field, where most serious range management takes place.

iii) Most range management courses in developed countries overlook or neglect the impact of the three most important features of range utilisation in developing countries, namely subsistence, nomadism and browse.

It is true to say that during our work in many African countries we have never met any qualified local range management personnel in the field.

What then can be done about this sad state of affairs?

One of the simpler solutions is to create courses in range management skills, at all levels, to be given in Somalia in close association with an actual range development project. Depending on the results of this exercise it could be decided to continue the courses after the project ends to meet

the needs of other range development projects in Somalia, and eventually of other countries with similar problems.

I have been able to discuss these ideas with Dr.Abdulahi Karani, who heads the National Range Agency,here, and he feels that there are exciting prospects to try a new approach to training for range development. In addition there seems to be national acceptance at the highest level of the need to involve experienced institutes in this effort, and I have suggested that Dr.Karani contacts you at the first opportunity.

I will be in Europe working of map printing in early September, and will make contact with you then. If you have any response to the idea as it presently stands perhaps you could write to me at the London address.

With best wishes to Jan van den Broek and my other friends at ITC.

Yours sincerely,

Watson

APPENDIX 1.07

INTERNATIONAL INSTITUTE FOR AERIAL SURVEY AND EARTH SCIENCES (ITC)
ITC-UNESCO CENTRE FOR INTEGRATED SURVEYS
ENSCHEDE (THE NETHERLANDS) 350 - BOULEVARD 1945 -PO.BOX 6

Dr. R.M. Watson
Resource Management & Research
16 B West Central Street
LONDON SW 1
ENGLAND

10/8/79 IS 900/7317 September 13, 1979

Dear Murray,

Thanks very much for your letter dated 10th August, regarding the training possibilities for the Somalia rangelands project.

From your description, it looks very interesting to us and we shall be happy to discuss it with you when you are in Europe. Also, we have received communication from Dr. Karani, even before your letter arrived.

As you may be aware, our activities in consultancy are coordinated centrally by a consultancy steering group headed by Prof. Caesar Voûte. I have referred the matter to him and he has replied briefly awaiting our talks on the project.

I am not certain whether I shall be in when you arrive, but Caesar Voûte and Jan van den Broek will be here to attend you. In view of the delay of this reply to your letter, I just phoned your office today, leaving the message that we are very interested in discussing the project.

With best regards,

Sincerely,

Jan Nossin

APPENDIX 1.07

CENTRAL RANGELANDS PROJECT TRAINING PROGRAMME SOME COMMENTS

Both contracts of agreement between the National Range Agency (NRA) and Resource Management and Research stipulate that RMR will select 8 NRA personnel for training abroad. This has not been done for the following reasons:

i) During the course of field work we were in general not accompanied by NRA staff, except those already assigned for training courses abroad.

ii) The propositions put forward by the NRA General Manager (Dr.Abdulahi Ahmed Karani) that training should be undertaken in Somalia, and orientated to the needs of the project seem of compelling importance, and make the selection of NRA personnel inappropriate. (See NRA letter to ITC of August 1979).

Accordingly, because of our contractual obligation, and out of a general interest in the future of this project WATSON has used his connections in ITC to advance the general idea that a Somali based project orientated training programme be initiated. He visited Enschede in Holland on 17 Sept. for a meeting with the ITC Consultancy Steering Group. At this meeting he put forward his views of the needs of the project, and, as far as possible, attempted to represent the NRA position on this subject. The response of the ITC Consultancy Steering Group was very positive, and can be summarised as follows:

i) They agree in principal with the idea that project orientated training (particularly at lower technical/managerial levels) located in the field and the project country is likely to be more effective than overseas courses.

ii) They have been examining this type of problem in relation to other regions for some time, and have at present a proposal from ILCA under consideration for establishing a Regional Training Institute.

iii) They saw the possibility of combining ILCA's interests with those of the NRA, and will look at this when Pratt (Director of ILCA) visits Enschede. (It would make good sense for ILCA to become involved with the Central Rangelands Project for several reasons;

a) At present ILCA's activities in Eastern Africa are focussed in rather anomalous "range areas" (Ethiopia & Kenya), and this will severely limit their ability to attract Arab based development funds.

b) The Central Rangelands Project offers one of the best opportunities in arid parts of Eastern Africa to operate a long term monitoring study. ILCA are anxious to produce something more concrete than they have so far in this field.

c) Poul SIHM, who pioneered the Central Rangelands Project at the World Bank is now in charge of the Monitoring Section of ILCA.

d) ILCA probably appreciate that their final effectiveness on the African Continent will depend upon the degree to which they can train local people to manage the rangelands. No one in Range Management in Africa finds the present training position in the least bit adequate or satisfactory.

iv) To train 200- 250 NRA personnel to staff the Project at the time foreign expertise is finally withdrawn clearly requires a much bigger effort than has been described in the project document. If the project is to persist after 6 years a large number of

of competent and motivated Somalis must be ready to take over; these people must be trained NOW.

v) In global terms ITC consider an 11 man-year consultancy in special training is needed: the cost of this, including materials, but not including permanent facilities such as buildings is about 3 million dollars. If the facility is expanded to become a regional training centre (which will depend upon its success in the project orientated phase, the cost of the project could presumably be set against a number of projects over several countries.

vi) The feasibility of such a project crucially depends upon the availability of persons to be trained, both as course operators, and to undertake the training courses.

WATSON agreed to carry these views to the NRA. It now rests with the NRA to follow up this response. ITC consider that a meeting between NRA, the donor agencies, ILCA, and themselves would be a reasonable next step. NMR will record in its final report that present levels of staffing and skills available in Somalia are most inadequate for the staffing of the Central Rangelands Project as it is currently conceived without a training effort far greater than that specified in the Project Document. More funds, or a re-apportioning of available funds will be needed to solve this problem.

R.M. WATSON
30.9.79

APPENDIX 1.07

The Central Rangelands Project
Training Programme Further Comments

It has been pointed out that the products to be handed over by RMR to the Central Rangelands Project will be difficult for all the staff, at present levels of training, to understand. Until the formal and non-formal training programmes of the Project are started we see little chance of radically changing this position, but agree with the Project Co-ordinator that a seminar, to be arranged in mid - December, could be the best, albeit temporary, solution. The seminar should be a meeting of Project personnel, who will have by then had the opportunity to read all the reports and other submissions. It would also be beneficial if general discussions took place about the implications of the base line resource data on the projects development, and particularly this should be considered with reference to the current planning documents. Clearly these discussions could usefully extend to the areas of the Projects future studies and monitoring programme, and to the local manpower and skills requirements for this programme (and hence training).

It should be pointed out that Watson will be in Somalia in mid - December preparing to start the Northern Rangelands Resource Inventory & Survey, assuming this study goes ahead. If this survey is delayed or not taken up then Watson would be available in mid- December only if other contracts permit, and at usual consulting rates.

With reference to our previous discussions concerning ITC we feel that the NRA should get a letter to them immediately putting forward an "in principle" interest in pursuing the general idea of ITC taking over the training programme. Say to them that you are waiting for the Project's Training Officer to arrive, and will shortly thereafter convene a meeting between donors, NRA staff, ILCA, Somali Government authorities (as appropriate) and ITC to push the idea to a series of agreements (or to decide it is not practical). An agenda for the meeting will be sent to ITC as soon as the Training Officer has time to consider the idea. Meanwhile it might be a good idea to send ITC the IBRD Project Document, with the details of present thinking about formal and non-formal training, pointing out that these plans are of a preliminary nature, and capable of substantial, even budgetary, modifications.

In order to reduce the difficulties presently encountered over report delivery (see first paragraph) we feel that if the Northern Rangelands Study goes ahead a training course of up to one month (delivered twice to the intake at the Burao Training Centre) on resource inventory techniques, applied agricultural and livestock

statistics, data handling and presentation, and field work interfaces with these methods, would ensure that there was a high degree of understanding of the contents of the reports, and an ability to make use of the data in them in field work applications. RMR are prepared to run such a field course.

R. M. WATSON.
10.10.79