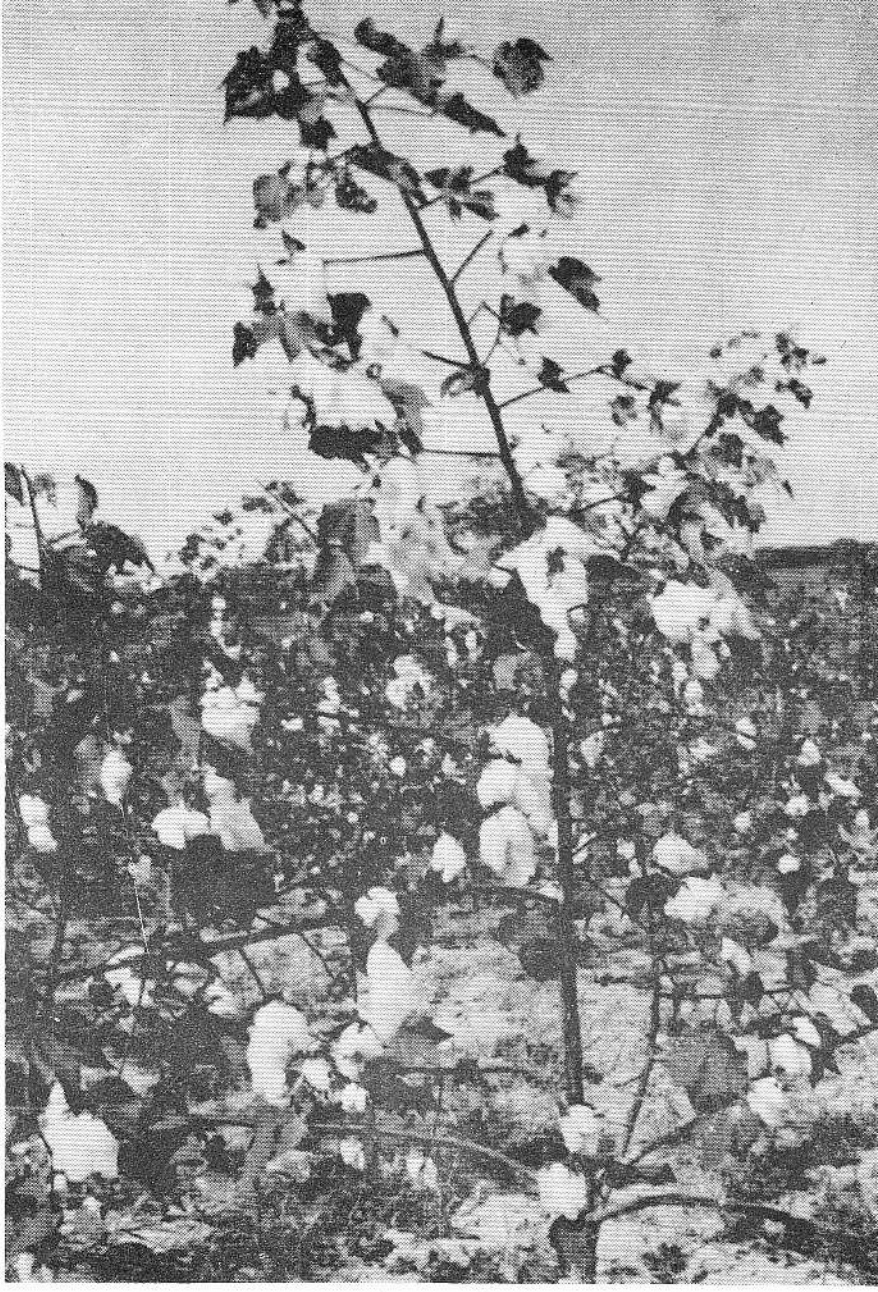

DESCRIPTORS for COTTON

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INTERNATIONAL BOARD FOR PLANT GENETIC RESOURCES

DESCRIPTORS FOR COTTON SPECIES

produced by an

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IBPGR Secretariat
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The International Board for Plant Genetic Resources (IBPGR) id an autonomous, international, scientific organization under the aegis of the Consultative Group on International Agricultural Resaerch (CGIAR). The IBPGR, which was established by the CGIAR in 1974, is composed of 15 members from 13 countries; its Executive Secretariat is provided by the Food and Agriculture Organization of the United Nations. The basic function of the IBPGR, as defined by the Consultative Group, is to promote an international network of genetic resources centres to further the collection, conservation, documentation, evaluation and use of plant germplasm and thereby contribute to raising the standard of living and welfare of people throughout the world. The Consultative Group mobilises financial support from its members to meet the budgetary requirements of the Board.

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PREFACE

Since cotton has been rated by the IBPGR as a crop for priority action and because the germplasm is of global interest, the IBPGR agreed to convene a Working Group to develop a minimum list of essential descriptors. These descriptors are needed for both cultivated and wild species. The Working Group met in Rome 30-31 October 1979 (the members of the Group are shown in Appendix III).

The IBPGR endorses the list and recommends it for widespread use for documentation and exchange purposes. It is noted that suggested coding for descriptor states, although representing a consensus of the experts, should not be regarded as the only definitive scheme.

Any suggestions for modiciations would be welcomed by the IBPGR Secretariat.

DESCRIPTORS FOR COTTON SPECIES

1. FIELD COLLECTION DATA

Data to be collected when material is collected in the field.

1.1 COLLECTION NUMBER

Number assigned to each accession by the primary collector. The recommended method is to prefix initials of the collector(s) name(s) up to three letters to a number not exceeding five digits. For example, JTW 00332, ANM 00028 etc.

1.2 COLLECTION DATE

The month and year in which a particular accession sample was collected. The month (two digits) and the year (last two digits) of collection. For example, October 1979 to be coded as 1079

1.3 COUNTRY OF COLLECTION

A three-letter abbreviation (United Nations standard country or area code for statistical use, series M. No. 499, UN Statistical Office, New York)

1.4 PROVINCE/STATE

Name or code representing the political or administrative sub-division of the country in which a particular accession was collected

1.5 COLLECTION SITE

Direction and number of kilometers from/to nearest town or village or specific known area on the road map. For example: 325W Santa Cruz

1.6 ALTITUDE

Elevation above sea level expressed in metres above sea level up to four digits

1.7 LATITUDE

Latitude in degrees (three digits) and minutes (two digits) both right justified within their own spaces. To avoid possible confusion, the latitude, north or south, should also be indicated by a suffix N or an S

1.8 LONGITUDE

Longitude in degrees (three digits) and minutes (two digits). To avoid possible confusion, the longitude, east or west, should also be indicated by a suffix E or a W

1.9 SAMPLE SOURCE

The place where the original collection was made

1 Field
2 Market
3 Farm store
4 Backyard
5 Wild or spontaneous

1.10 VERNACULAR NAME

Name given locally to a cultivar by the farmers where the sample was collected, including the names of the varieties released through crop improvement programmes

1.11 ETHNIC GROUP

Name of the tribe or ethnic group providing the vernacular name of the particular sample

1.12 CULTURAL PRACTICE

Method of farming at the site of collection

1 Dryland
2 Irrigated

1.13 GERMPLASM TYPE

1 Wild
2 Cultivated
3 Secondarily wild

1.14 SAMPLE TYPE

1 Single plant
2 Population

2. VARIETAL AND GENETIC STOCKS

2.1 ACQUISITION DATE

The month and year in which a particular variety or genetic stock received

2.2 ORIGIN/SOURCE

The name of the person or institution responsible for donating the material

2.3 PEDIGREE

Nomenclature or designation assigned to the breeder's material

3. ACCESSION IDENTIFIER

Data recorded when an accession is entered into a genebank or germplasm collection

3.1 ACCESSION NUMBER

A number intended to serve as a unique identifier for an accession. This number, once assigned, can never be re-assigned to another accession; even when an accession becomes extinct, its assigned accession number is still not available for re-use. Accession numbers are alpha-numeric, composed of a three-letter abbreviation, left justified, followed by up to seven digits, right justified

3.2 DONOR NAME

3.3 DONOR NUMBER

4. TAXONOMIC AND MORPHOLOGICAL EVALUATION DATA

4.1 SPECIES NAME 1/ (See Appendix I)

4.2 PLANT

4.2.1 Growth Habit

(Descriptions of gross morphology to be agreed at a future date)

4.2.2 Colour

1 Green
2 Greenish purple (sun red)
3 Red

1/ Taxonomically, the validity of the current sub-specific divisions is questionable

4.2.3 Hairiness

1 Glabrous
2 Intermediate with short hairs
3 Intermediate with long hairs
4 Hairy: all hairs short
5 Hairy: all hairs long

4.3 LEAF SHAPE

1 Entire
2 Lobed

4.4 FLOWER CHARACTERISTICS

4.4.1 Petal Colour

1 White
2 Cream
3 Light yellow
4 Yellow
5 Lavender

4.4.2 Petal Spot

1 Absent
2 Small
3 Large

4.4.3 Pollen Colour

1 Cream
2 Yellow

4.5 BOLL

4.5.1 Shape

1 Round
2 Oval
3 Conical

4.5.2 Opening

1 Normal
2 Intermediate
3 Storm proof

4.6 SEED FUZZ

1 Naked
2 Sparse
3 Fuzzy

4.7 FUZZ COLOUR

1 White
2 Green
3 Grey
4 Brown (tan)

4.8 LINT COLOUR

1 White
2 Cream
3 Light Brown
4 Brown

5. AGRONOMIC EVALUATION DATA

5.1 AGRONOMIC EVALUATION IDENTIFIER

5.1.1 Site : The name of the locality where the material is evaluated

5.1.2 Year : The month and year in which the material was planted for evaluation

5.1.3 Evaluator : Name of the person carrying out the evaluation

5.2 PLANTING DATE

The day, month and year on which the accession was planted for evaluation

5.3 DAYS TO EMERGENCE

Number of days from planting to 50% seedling emergence

5.4 PLANT HEIGHT (in cm)

The mean height of the main stem at the time of maturity

5.5 DAYS TO 50% FLOWERING

Number of days from planting to 50% of plants with first flower open

5.6 DAYS TO 50% OPENING

Number of days from planting to 50% opening

5.7 PHOTOPERIODISM

1 Insensitive
2 Sensitive

5.8 BOLL CHARACTERISTICS

Based on 50 undamaged boll samples at first picking

5.8.1 Locules per boll

5.8.2 Seed Cotton in g per Boll

5.8.3 Lint Percent

5.8.4 Lint Index in g

5.8.5 Seed Index in g

5.9 FIBRE CHARACTERISTICS OF SEED

(Using samples from 5.8)

5.9.1 Fibre Length

5.9.1.1. 2.5% span

5.9.1.2 50% span

5.9.2 Fibre Strength

5.9.2.1 T0 g per tex.
The fibre strength of a bundle of fibres measured on a stelometer with the two jaws holding the fibre bundle tightly oppressed

5.9.2.2 T1 g per tex.
The fibre strength of a bundle of fibres measure on a stelometer with the two jaws holding the fibre bundle separated by a 3-5 mm space

5.9.2.3 E1
The percentage elongation at break of centre 3.5 mm of the fibre bundle measured for T1 strength on a stelometer

5.9.3 Fibre Fineness

5.9.3.1 Micronaire
The fineness of the sample taken from the ginned lint, but measured by a micronaire and expressed in standard (curvilinear scale) micronaire units

5.9.3.2 Maturity (specify instrument)

5.9.4 Yellowness (B)

Hunter's B value as a measure of increasing yellowness of the cotton

5.9.5 Reflectance (RD)

RD is a measure of the percentage of reflectance (the higher the value, the lighter the cotton)

5.10 SEED COMPOSITION

Whole acid delinted seed on dry weight basis

5.10.1 Oil Content

5.10.2 Protein Content

5.10.3 Gossypol Content

6.0 REACTION TO PESTS AND DISEASES

Descriptors in this class describe the reaction of an accession. These may be coded using a scale of 1-9, where 1 is resistant and 9 very susceptible. The pests/pathogens and part(s) attached should be specified

(A list of the most common diseases and pests is presented in Appendix II).

APPENDIX I

LIST OF *GOSSYPIUM* SPECIES

GENOME [1]	
C_1	*Gossypium sturtianum* J.H. Willis
C_{1-n}	*G. sturtianum* var. *nandewarense* (Derera) Fryxell
"C_2"	*G. robinsonii* F. von Mueller
"C_5"	*G. costulatum* Todaro
"C_8"	*G. pulchellum* (C.A. Gardner) Fryxell
"C_6"	*G. populifolium* (Bentham) F. von Mueller ex Todaro
"C"	*G. pilosum* Fryxell
"C_7"	*G. cunninghamii* Todaro
"C_3"	*G. australe* F. von Mueller
"C_9"	*G. nelsonii* Fryxell
G_1	*G. bickii* Prokhanov
B_2	*G. triphyllum* (Harvey) Hochreutiner
"D_8"	*G. trilobum* (Mociño & Sessē ex DeCandolle) Skovsted
D_1	*G. thurberi* Todaro
D_{3-k}	*G. klotzschianum* Andersson
D_{3-d}	*G. davidsonii* Kellogg
D_{2-2}	*G. harknessii* Brandegee
D_2-1	*G. armourianum* Kearney
"D"	*G. turneri* Fryxell
D_4	*G. aridum* (Rose & Standley) Skovsted
D_9	*G. laxum* Phillips
D_7	*G. lobatum* Gentry
D_6	*G. gossypioides* (Ulbrich) Standley
D_5	*G. raimondii* Ulbrich
A_2	*G. arboreum* Linnaeus
A_1	*G. herbaceum* Linnaeus
A	*G. herbaceum* var. *africanum* (Watt) Hutchinson & Ghose
B_1	*G. anomalum* Wawra ex Wawra & Peyritsch

1/ Genomes with quotes are questionable

B_4	*G. capitis-viridis* Mauer
E_1	*G. stocksii* Masters in Hooker
E_2	*G. somalense* (Gürke) Hutchinson
E_4	*G. incanum* (Schwartz) Hillcoat
E_3	*G. areysianum* Deflers
F_1	*G. longicalyx* Hutchinson & Lee

TETRAPLOIDS

$(AD)_3$	*G. tomentosum* Nuttall ex Seemann
	G. lanceolatum Todaro
$(AD)_1$	*G. hirsutum* Linnaeus
$(AD)_2$	*G. barbadense* Linnaeus
"(AD)"	*G. mustelinum* Miers ex Watt
AD	*G. darwinnii* Watt

APPENDIX II

LIST OF THE MOST IMPORTANT DISEASES AND PESTS

Diseases	Common name	SCIENTIFIC NAME
Bacterial	Bacterial blight	*Xanthomonas malvacearum* (E.F. Sm) Dows
	Angular leaf spot	" " " "
Fungal	Seed rot	*Alternaria tenuis* Auct.
		Aspergillus flavus Lk. es. Fr.
		Aspergillus niger V. Tregh
		Fusarium moniliforme Sheldom
		Rhizopus arthizus Fischer
		Rhizopus nigricans Ehr.
	Seedling blight	*Colletotrichum gossypii* South.
		Fusarium Sp.
		Macrophomina phaseoli (Maubl.) Ashby
		Physalospora rhodina (Berk et Curt) Cke (=*diplodia gossypina* Cke.)
		Pythium sp.
		Thanatephous cucumeris (Franck) Donk (=*Rhizoctonia Solani* Kuhn)
	Root rot	*Phymatotrichum omnivorum* (Shear) Dug.
		Macrophomina phaseali (Maubl.) Ashby
		Thielaviopsis basicola (Berk. et Br.) Ferr.

LIST OF THE MOST IMPORTANT DISEASES AND PESTS

Diseases	Common name	SCIENTIFIC NAME
Fungal	Rust	*Cerotelium desmium* (Berk. & Br.) Arthur *Puccinia Schedonnardi* Tell & Swing *Puccinia stakmanii* Presley *Puccinia cacabata* Arth. & Holw.
	Anthracnose	*Glomerella gossypii* Edg. (=*Colletotrichum gossypii South.*)
	Blight	*Ascochyta gossypii* Wocinin
	Aerolate mildew	*Mycosphaerella areola* Ehrlich & Wolf (=*Famularia areola Akt*)
	Boll rot	*Colletotrichum* sp. *Diplodia gossypina* Cke. *Aspergillus niger* Tiegh *Rhizopus nigricans* Ehr. *Fusarium moniliforme* Sheldom
	Fiber stain	*Ashbya gossypii* (Ash. & Now) Guill. *Nematospora Coryli* Peglion
	Wilt	*Fusarium oxysporum* Schl.f. sp. *Vasinfectum* (Atk.) *Venticillium dahliae* Kleb.

LIST OF THE MOST IMPORTANT DISEASES AND PESTS

Diseases	Common name	Scientific name
Nématodes	Reniform nématode	*Rotylenculus reniformis*
	Rootknot	*Meloidogyne incognita*
	Sting (Coarse root) nématode	*Belonolaimus longicaudatus*
Viruses or mycoplasmas	Anthocyanosis	Aphid (Vector)
	Blue disease	" "
	Cotton mosaic (several forms)	White fly *Bemisia tabaci* (Vector)
	Leaf curl	" " "
	Leaf crumple	" " "
	Virescence	*Orosius* (Vector)
	Psyllosis	*Paurocephala gossypii*
Insect pests		
Orthoptèra	Locust -	*Zonocerus variegatus*
	Cricket	*Brachytrupes*
Thysanoptèra	Onion thrips	*Trips tabaci* - Lindeman
	Flower thrips	*Frankliniella schultzei*
Heteroptèra	Plant bug	*Campylomma* spp.
	Plant bug	*Lygus vosseleri*
	"	*Lygus hesperus*

LIST OF THE MOST IMPORTANT DISEASES AND PESTS

Insect pests	Common name	Scientific name
Heteroptèra	Plant bug	*Ligus lineolaris*
	"	*Helopeltis schoutedeni*
	"	*Horcias nobilellus*
	"	*Eurystylus bellevogei*
	"	*Creontiades pallidus*
	"	*Megacoelum* spp.
	Boll bug	*Dysdercus* spp.
	Green boll bug	*Nezara viridula*
	Seed bug	*Oxycarenus* spp.
Homoptèra	Jassid	*Empoasca* spp.
	Cotton aphid	*Aphis gossypii*
	Sweet potato whitefly	*Bemisia tabaci*
Lepidoptèra	Bollworm	*Heliothis armigera*
	"	*H. zea*
	Tobacco budworm	*H. virescens*
	Leaf worm	*Spodoptera litura*
	"	*S. littoralis*
	"	*S. exigua*
	"	*Sylepta derogata F.*
	"	*Cosmophila flava*
	"	*Cosmophila auragoides*
	"	*Alabama argillacea*

LIST OF THE MOST IMPORTANT DISEASES AND PESTS

Insect pests	Common name	Scientific name
Lepidoptèra	Thorny bollworm	*Earias insulana*
	" "	*E. biplaga*
	" "	*E. vittella*
	Bollworm	*Diparopsis watersi*
	"	*D. castanea*
	Pink bollworm	*Pectinophora gossypiella S.*
	Bollworm	*Cryptophelebia leucotreta*
	"	*Sacadodes pyralis*
Coleoptèra	Altises	*Podagrica* spp.
	Bollweevil	*Anthonomus grandis*
	Borer	*Eutinobothuras* spp.
Acarina	Red Spider mite	*Tetranychus telarius*
	" " "	*T. neocaledonicus*
	" Strawberry spider mite	*T. turkestani*
	Cotton spider mite	*Oligonychus gossypii*
	Cotton tarsonemid mite	*Hemitarsonemus latus*
Myriapods/Diplopods	Millepede	*Tibiomus* spp.
	"	*Peridontopyge* spp.

APPENDIX III

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