AGRICULTURAL RESEARCH SERVICE
NORTHEASTERN REGION

OF UNITED STATES
DEPARTMENT OF
AGRICULTURE

BELTSVILLE AGRICULTURAL RESEARCH CENTER
BELTSVILLE, MARYLAND 20705

December 12, 1977

Subject: Response To Your Memorandum Dated September 21, Concerning Questions On Time Required To Conduct Field Work In Tanzania.

To: Robert E. Perdue, Jr., Chief
Medicinal Plant Resources Laboratory

As you requested, I have written family names beside the species listed in my memoranda dated September 14.

Also, a review of Acacia mearnsii was completed in May 1977. A copy of that review is attached.

I have estimated the time required to collect species considered available in the Usambaras and Southern Highlands (mainly Mufindi). For each area, the respective plants are summarized separately in tables 1 and 2 (attached). The probabilities indicated refer to our chances of locating and identifying a species in one day. The weight is the number of pounds of the sample that is expected to be obtained from one site.

The expected yield, for example, means that it will take 4½ days to collect 200 pounds of Acalypha stuhlmannii (pl). This does not include time to locate and identify the plant but does allow one hour drive from the starting point to the collection site.

Assuming that field work is first to take place in the Usambaras:

1. It is possible (but not likely) that 21 species would be located yielding 7,400 pounds of plant parts to be completed in about 74 days. This would leave only Bridelia brideliifolia at Mufindi.

2. It is possible that 21 species could be found yielding 6,100 pounds of samples in 64 days.

3. It is expected (probable) that 14-15 species will be located yielding 4,200 pounds of samples in 43 days. An example of what might have to be collected at Mufindi is shown in Table 3.

In summary, it is expected that 43 days will be required to collect samples from the Usambaras and 29 days to collect samples from the Southern Highlands. Time needed for reconnaissance, drying and shipping is not included here.

I have not seen any guidelines as to how much time should be devoted to searching for a particular plant. Nevertheless, I suggest (1) a visit to Kew to record locality data and to become familiar with an active species and its relatives (2) a preliminary reconnaissance to initially locate as many of the active species as possible (3) to first collect those species which were found in adequate quantity and (4) set guidelines on the minimum acceptable weights of a sample and on additional time allowed in searching for adequate quantity on any ~~resembling~~ potential collection not yet found.

The kinds of problems I see are discussed in my memorandum "Some Limiting Factors Affecting Field Work Productivity in East Africa". Also, a general overview of the field situation is presented in another memorandum "Climate, Vegetation and Availability of Some Active Species In the Usambaras and Southern Highlands".

Richard W. Spjut, Botanist
Medicinal Plant Resources Laboratory
Building 265, BARC-East

cc: Arthur S. Barclay

Note:

General Formula For Estimating the Amount of Time to Conduct Field Work In ~~East Africa~~ Tanzania.

Preparations in Dar-es-Salem	7 days
Travel to Field Sites:	
Tanga	1
Mufindi	2
Reconnaissance	—
Collecting	1 day/100 lbs.
Drying	7 days/site
Final arrangements in Dar-es-Salem	5

Examples using data and suggestions in memoranda dated December 12.

Preparations	7
Work In The Coastal Districts	
Travel to Tanga	1
Reconnaissance	7
Collecting	43
Drying (two sites)/	14
Return to Dar-es-Salem	1
Arrangements For Shipping	5
Work in The Southern Highlands	
Travel to Mufindi	2
Reconnaissance	5
Collecting	27
Drying	7
Return to Dar-es-Salem	2
Final arrangements	5
TOTAL	~~119~~ 126

f Availability of Kenya and Tanzania Actives In
ambara Mountains and Coastal Lowlands, Tanzania.

E 1.

Collection Required			Expected Limiting Factors			Expected Yield per Site	
Species (Family)	Plant Part	Weight (pounds)	Plant Part for Sample or Iden.	Abundance	Probability	Weight (pounds)	Time (day)
Acalypha stuhlmannii (Euphorbiaceae)	pl	300	fl	occasional-frequent	67-90%	200	4.5
Afrocrania volkensii (Cornaceae)	sb	300	none	none	90-99%	300	3.5
Aquatia salicifolia (Ericaceae)	sb	300	none	none	90-99%	300	3.5
Begonia meyer-johannis (Begoniaceae)	pl	300	?	local-common	67-90%	300	3.5
Commiphora boiviniana (Burseraceae)	tw	300	lf	occasional	50%	100	2.0
Excoecaria bussei (Euphorbiaceae)	sb	300	lf or fr	frequent	67-90%	300	3.0
Gardenia jovis-tonantis (Rubiaceae)	tw	500	fl	none	50%	500	4.0
Gnidia kraussiana (Thymelaeaceae)	pl	500	fl	local-common	67-90%	100	1.0
Hypoestes verticillaris (Acanthaceae)	pl	300	fl-fr	local-abundant	67-90%	300	3.0
Millettia oblata (Fabaceae)	rt,sb	300,300	?	occasional-frequent	50%	300	4.5

TABLE 1. (cont.)

Collection Required			Expected Limiting Factors			Expected Yield per Site	
Species (Family)	Plant Part	Weight (pounds)	Plant Part for Sample or Iden.	Abundance	Probability	Weight (pounds)	Time (day)
Monanthotaxis buchananii (Annonaceae)	tw	300	fl	occasional-frequent	67-90%	100	2.0
Parinari curatellifolia (Chrysobalanaceae)	fr	300	fr	none	50%	300	*2.0
Periploca lineariifolia (Asclepiadaceae)	st-lf	300	?	local-common	67-90%	300	3.5'
Phoenix reclinata (Arecaceae)	rt-lf (base)	300	none	none	90-99%	300	2.5
Psorospermum febrifugum (Clusiaceae)	rt	500	?	frequent-com. (local)	67-90%	500	5.5
Sansevieria ehrenbergii (Agavaceae)	st-lf	300	?	none	67-90%	300	3.0
Tabernaemontana ventricosa (Apocynaceae)	rt	500	?	?	50%	100	2.0
Tacazzea galactogoga (Asclepiadaceae)	tw-lf fr	300	fl or fr	local-common	50%	300	3.0
Uvaria kirkii	tw-lf	300	fl	local-common	67-90%	300	3.5
Ximenia caffra	ws-sb	300	lf or fl	none	67-90%	300	0.5
Warburgia salutaris	sb	300		none	90-99%	300	4.0

TABLE 1. (cont.)

Collection Required			Expected Limiting Factors			Expected Yield per Site	
Species (Family)	Plant Part	Weight (pounds)	Plant Part for Sample or Iden.	Abundance	Probability	Weight (pounds)	Time (day)
Monanthotaxis buchananii (Annonaceae)	tw	300	fl	occasional-frequent	67-90%	100	2.0
Parinari curatellifolia (Chrysobalanaceae)	fr	300	fr	none	50%	300	*2.0
Periploca lineariifolia (Asclepiadaceae)	st-lf	300	?	local-common	67-90%	300	3.5'
Phoenix reclinata (Arecaceae)	rt-lf (base)	300	none	none	90-99%	300	2.5
Psorospermum febrifugum (Clusiaceae)	rt	500	?	frequent-com. (local)	67-90%	500	5.5
Sansevieria ehrenbergii (Agavaceae)	st-lf	300	?	none	67-90%	300	3.0
Tabernaemontana ventricosa (Apocynaceae)	rt	500	?	?	50%	100	2/0
Tacazzea galactogoga (Asclepiadaceae)	tw-lf fr	300	fl or fr	local-common	50%	300	3.0
Uvaria kirkii	tw-lf	300	fl	local-common	67-90%	300	3.5
Ximenia caffra	ws-sb	300	lf or fl	none	67-90%	300	0.5
Warburgia salutaris	sb	300		none	90-99%	300	4.0

Summary of Availability of Kenya and Tanzania Acitves In the Southern Highlands, Tanzania.

TABLE 2.

Collections Required			Expected Limiting Factors			Expected Yield per Site	
Species (Family)	Plant Part	Weight (pounds)	Plant Part for Sample or Iden.	Abundance	Probability	Weight (pounds)	Time (day)
Acalypha stuhlmannii (Euphorbiaceae)	pl	300	fl	occasional-frequent	67-90%	200	4.5
Aquaria salicifolia (Ericaceae)	sb	300	none	none	90-99%	300	3.5
Afrocrania volkensii (Cornaceae)	sb	300	none	?	67-90% Mufindi 90-99% Mbeya	300	3.5
Begonia meyer-johannis (Begoniaceae)	pl	300	?	local-common	67-90%	300	3.5
Bridelia brideliifolia (Euphorbiaceae)	rt	500	?	none	67-90%	500	7.0
Gnidia kraussiana (Thymelaeaceae)	pl	500	fl	none	90-99%	500	3.0
Hypoestes verticillaris (Acanthaceae)	pl	300	fl	local-abundant	67-90%	300	3.0
Millettia oblata (Fabaceae)	rt,sb	300,300	?	occasional-frequent	50%	300	4.5
Phoenix reclinata (Arecaceae)	rt-lf (base)	300	none	local-common	90-99%	100	1.0
Psorospermum febrifugum (Clusiaceae)	rt	500	none	none	90-99%	500	3.0
Total Possible: 10 species		3,900				3,300	34.5
Total Probable: 8-9 species		----				3,000	27

Some Species Which May Likely Have to be Obtained From Mufindi Following Field Work In the Usambaras.

TABLE 3.

PLANT	PART	DAYS	WEIGHT
Acalypha stuhlmannii	pl	4.5	200
Begonia meyer-johannis	pl	3.0	300
Bridelia brideliifolia	rt	7.0	500
Gnidia kraussiana	pl	3.0	500
Millettia oblata	rt, sb	4.5	600
Parinari curatellifolia	fr	2.0	300
Psorospermum febrifugum	rt	3.0	500
Total: 7 species		27 days	2,900 lbs.