

Expedition No. 6 Journal Notes: East Africa to West Africa (1968) Trans

Color Code: sorghum, rice, millet, Sesame XI (The I was added to transcript because it was deleted in the original.)

SUMMARY: This expedition (Exp. No. 6) is the second of a trilogy of trips to Africa, collecting, looking for centers of origin and, as it turned out, consulting farmers about their particular situations. He begins in East Africa and moves across the Savanna into West Africa. Note that Nigeria, one of his main objectives, is in the middle of a civil war with the secessionist province of Biafra (1967-70). He makes no mention of this in his notes, except for a “curfew” which has to be acknowledged in a few cases. This trip starts off with a rather disastrous flight and includes a time of great frustration on the part of Dr. Jack Harlan.

[Champaign](#) (Sept. 20, 1968)

[Sudan](#) (Sept. 21 – Oct. 8: 19 days)

[Chad](#) (Oct. 9 – 19: 11 days)

[Cameroon](#) (Oct. 20: 1 day)

[Nigeria](#) (Oct. 21 – Nov. 7: 18 - 2 = 16 days)

[Niger](#) (Oct. 30 – 31: 2 days)

[Cote d’Ivoire](#) (Nov. 8 – 12: 5 days)

[Sierra Leone](#) (Nov. 13 – Dec. 21: 39 days) He had been hired by NUC to work there for 6 weeks.

Champaign (Dec. 22)

{WRITTEN ON INSIDE FRONT COVER OF JOURNAL:}

Sudan:

ABDELHHEEZ A. EL-RUFAIE

{HE GIVES TWO PHONE NUMBERS}

ASIIA 5757 So. Woodlawn, Chicago 60649

Home {AND HE GIVES A HOME ADDRESS – 6841 So. Clyde, Chicago 60649

Dean Nour, Dean of Agr. U. of Khartoum, Shambat

Dr. Osman Khidar, Bot. Dept. Shambat (safflower – Knowles)

Dr. Ali E. Kambal – Head Bot. (sorghum) Nebraska

Dr. El Saeed, El Sneed, Agron, Shambat

Jack R. Harlan Expedition No. 6: Sept 20 – Dec. 22, 1968 East Africa to West Africa (3 months & 2 days)

Hgabawi = Head Agron.

M. Osman Mutwakil, Director Hedeiba Sta. N. of Khartoum

Hans Von Streng, Ministry of Agric., Khartoum

Mahmoud ahmet Mahmoud (M. A. Mahmoud)

Abu Naama Research Station

Abu Naama, Sudan

Osman Abdella Yousif, (arranged trip)

Ministry of Agriculture

{PAGE 1 – AT TOP OF PAGE IS A STRING OF 9 CHARACTERS IN SOME (TO ME) UNKNOWN SCRIPT.}

In Champaign, Illinois

Sept 20, 1968. “Finally got the passport last night about 9:00 pm, but not a single useful visa. Sudan 1 week instead of two – Chad only 3 days – NO CAR, No Nigeria, No Congo, No Ivory Coast and No. S. L. Pretty hopeless way to start. Packed until late & tired, got up at 6:00 & Bob & Rich¹ & I left by 7:00. Hit some very dense fog near Chicago, but went through it & found planes flying about normally. Dropped off Bob& Rich & went to museum of Science & Industry. Some very interesting things there. Had lunch; fierce traffic back to O’Hare. Rich left on schedule at about 3:00 & I spent considerable time trying to find a single piece of paper to write a couple of letters. The busiest airport in the world doesn’t seem to have any. Finally, the wait over, boarded TWA & we got off about on time. The usual all through the night – about 7 ¼ hours to London where it was midmorning of -”

Sep 21 “Olympic (Greek) flight was supposed to go by Paris, but went instead to Frankfurt & filled up with Germans on a tour to Jerusalem. At Athens, utter madness. No one knew anything and no one cared, but managed to get me and my luggage on Swiss Air to Cairo and, eventually, **Khartoum**. It was almost midnight local time when I got to the Grand Hotel & checked in. Money regulations very tight. It was a 35 hour trip from Champaign, but only a day from Chicago. About 85° at midnight.”

Sudan (Sept. 21 - Oct. 8, 1968; 19 days)

¹ Jack’s son, Richard, was now attending Northwestern University in Evanston, Ill, just north of Chicago. In short, Bob Hughes was driving Jack and Rich up to Chicago, dropping them off at their respective departure points and then returning to Champaign.

Jack R. Harlan Expedition No. 6: Sept 20 – Dec. 22, 1968 East Africa to West Africa (3 months & 2 days)

Sep 22² “Slept until nearly 8:00 local time. Changed US 50 at hotel bank & hiked to Ministry of Interior to work on visa. Complete confusion as expected. What makes these ministries so much alike? Only complete idiots would work at such jobs, of course, and the sense of power over the helpless applicants. Another Parkinsorian Rule. At any rate, after much back & forth and working through much false information, I got the forms filled out, the stamps bought, the very high fee paid & left the passport to be picked up in 5 days. What happens if I need it, I don’t know. Then up town getting hot & much closed down so then to Barkley’s Bank to try letter of credit. Over one hour of fiddle. Perhaps they had never seen one before, but the same rules seemed to apply as at the ministry. Eventually sold \$200 US at a slightly better rate and trudged back to hotel in the hot sun. Beer, lunch & sack out. Now writing this on Grand Hotel terrace over the Nile. Night falls swiftly & is black & desert-clear. Still hot & the beer is expensive.”

Sep 23 & 24 “Took cab to **Shambat** {Google: The Univ. of Khartoum is in Shambat, about 10 km north of Khartoum across the Blue Nile}³. Visited with El Saeed⁴ and Kambal⁵ – some notes next pages. Went to town & got passport out, arranged program, etc. Got tickets arranged, etc. Details follow later, but a good day. / The program ultimately arranged through a new Office of Foreign Relations in the Ministry of Agriculture. As a result of letter from El-Rufaie. Exceptional cooperation.

{On page 4 of his journal Harlan posts notes from his interviews with the men who met him there:}

Sudan Agricultural Journal

El Saeed:

Cotton, groundnut, sesame ¾ million A Egyptian

Sorghum, gum Arabic – ¼ million A. Upland

Aish = durra but most common. / broadbean Egyptian beans

“ = ‘bread’

In No. Sudan wheat is more important than sorghum.

Pearl millet to west of Sudan, toward Chad.

² Sunday, but this is a Muslim country.

³ University of Khartoum, Sudan: Silver Jubilee of the Faculty of Agriculture, Shambat, from <http://www.nature.com/nature/journal/v208/n5011/abs/208620a0.html>

⁴ The best match I could come up with was Elsayed Ali Ahmed Zaki, BS 1967 from Khartoum U; later (1990’s) became expert on drought and desertification in Sudan.

⁵ Ali E. Kambal, Professor of Plant Breeding, University of Khartoum, Sudan.

Kambal – Nebraska – sorghum – fatarita types – very white & chalky for towns – country like more vitreous & in south brown types for beer – used no bread in towns & north; as porridge in west. (Do we take Sudan Agricultural Journal?) A suggestion that long glume may help against midge – no use for birdproofing.

Hagbawi: re cotton growing in Nigeria, seeding data is best in June but always sown late July because food crops come first. Research should be adjusted accordingly. Experiments should be conducted at 'wrong' data, etc. Some local varieties of sorghum mature in 60-65 days, tiller heavily against locusts / 250-350 mm belt where conditions are tough varieties? Are named after villages or people. People will even sell animals to get the good seed.

{PAGE 5} Shambat Herbarium: Bot. Dept.

- (1) *S. aethiopicum*: Harrison 1222 Kassala. Prov. Gadaref Dist. Jebel en Nasales on Kassala – Khartoum road. Clay 100 mm rainfall (9/10/51) /
- (2) Harrison 981 Kordafan Prov. Northern Dist Bir Sonj. Wadi Magaddan on boundary with Khartoum Province. 12/9/50

- (1) *O. barthii* (new) Sudan. Reshid Kassala Prov.
- (2) -----“----- Da’ein, Southern District Darfur Prov. temporary water pool

In better area > 650 mm rotation not as good & practices not so precise. Contour terraces 'touruz' Arabic for the contour. {HERE THERE IS A LITTLE CURVE DRAWN} Very exactly on contour. Moisture, therefore varies & spacing is varied accordingly. Some selection for milk production on village herds. Plow & bullocks along the Nile – hoe culture elsewhere – S. of Khartoum plow is used to raise the touruz ridge only, hoe between ridges and S. of that the hoe only. [Looks like basically sorghum & millet culture is a hoe system: small grains a plow system. The two overlap in Sudan.]”

{TOP OF PAGE 6} “Write from Illinois to get on meeting list Dean M. A. Nour (below) Mohamet A. Nour, Dean College of Agric. Univ. of Khartoum Shambat, Khartoum.”

{FIRST ENTRY TO PAGE 6:} “Osman Khidir: *S. alatum*⁶ 26 chroms the cult. but does not cross – sandy soils western Sudan & island of Tuti in Khartoum. Very different suds, long capsule [*S. radiatum* 64 chroms also wild in Sudan. Does cross] very different flowers & plants. *Regama* related genus in Pedalacac. – wild here. Looks like *S. alatum* had nothing to do with cult sesame. *Sesame* said to be abundant in ancient Egypt, but Khidir didn't seem to know much about it.

Dean Mohamet N. Nour wrote to be put on mailing list.”

25IX “Herbarium at Univ. of Khartoum (PAGE 6-8)

⁶ *S. alatum* seems to be sesame not sorghum. There is a sesame species *alatum*.

O. longistaminata: Blair 202 W. Dobanie 12°10' N 22° 46' E 1800 ft Jebel Marra

I *S. aethiopicum*: R. de Bois 12 Sept. 1951 Shambat

I. *P. violaceum* in Jebel Marra labeled *P. darfuricum*

Ministry of Animal Resource. Herbarium (MAR)

(1) *S. 'lanceolatum'* spets + *aethiopicum*-like, big stale' Harrison 204 , 14.10.47 Shankletebaiya
OH Fasher-Nyala road Darfur Province Cominant with Cda.

(TOP OF PAGE 7) MAR (Cont.)

(2) *S. 'lamacolatum'* Harrison 40 18.6.47 bet. Buffalo Cape & Kilo 60 Bahr el Jebel Upper Nile
Province – deep stream bed & swamp by bank (v. large head. *S. vert*-like but w. larger
spikelets than usual – almost *S. vert* x *S. aeth* spets)

(3) *S. ?* near Klor Doleib (Renk) – 3.11.52 'usually in wetter sites' (long axis, short branches v.
large orange-brown spets)

(4) *S. aethiopicum* (yes!) Harrison 981 12.9.50 Kordofan Northern Dist. Bé-Song – Wadi
Mugaddam boundary w. Khartoum Province – 100 mm rainfall

(5) *O. longistaminata*. Harrison 671 Shambia road ramp. Lakes Dist. Bahr el Ghagal Province.
Dominant over large area.

(6) *O. longistaminata* Harrison 1329. Between Baisir and Kongar, Bor Dist. Upper Nile Prov.

(7) *O. longistaminata* Harrison 247 Shambe, Equitorial Province. 'Seeds eaten by people'.

(8) *O. longistaminata* Peers M.O.B. 17.9.53 Equitorial Prov. Eastern dist. 5 miles NE of
Nawiyapala in Hhar to pokori

(9) *O. barthii* (new) Harrison 98 – 17.9.47. Da'ain, S. dist. Darfur Prov.

(10) *O. barthii* Harrison 1411 24.8.50 Kordofan Prov. Central Dist near Hamadia, dor Hawayman

(11) *S. 'lanceolodan'* Harrison 916 Kordofan Northern Dist. Near Safuya, [then *S. aeth*. Look, but
a big plant]

(12) *S. aethajueim* Harrison 12220 Khartoum – Kamsale Rd. at Jen Nasala

(13) *S. aethiopicum* M. Baumer 746 9.2.60 SW of Jebel Khurwa, N. of Sodier 14° 28' N, 28° 46' E

(14) *O. punctata* Jackson 336 Equatoria, Juba Dist. At Yabu Pipi M. Mongalla

(15) *O. barthii* (new) Harrison M. Hamedi on el Obeid. – Sungekai Rd.

Had to quit for lack of time. Dashed to hotel. Paid huge bill £21 & rushed to bank before it closed & converted another \$100. Hope its cheaper upcountry. Hotel not accommodating so checked out. Wandered about downtown a while but heat & thirst drove me into Hotel Metropol bar where I killed time under a fan. Finally back to Grand & much waiting. Then hiked to Sudan museum about 4:00 with heat easing somewhat. Some very nice things in the museum but Egypt oriented – no real indication of indigenous and/or negric culture. They have a race problem. Back to hotel, tired & feet sore. More wait & at 7:00 Kambel⁷ came & took me

to train (from Khartoum (1)). He is not going with me by train after all – I don't think he wanted to anyway, but trouble getting a seat & family arrived, etc. Supposed to meet him at El Obeid. Train gave a tiny whistle and bravely set off exactly at 8:00 pm. Compartment comfortable enough & not too much soot, but fan stops whenever the train does. Still, a good night."

26IX "Awoke along the **Gazeera (Google: Al Jazirah (2))** with vast fields of cotton, **patches of sorghum and small patches of pearl millet.** **Vast amounts of weed sorghum. It does look awfully green & there may be no seed. Not much chance to collect from moving trains, anyway & this should be easily accessible. Looks + Sudangrass, but wide leaves & the aphts may be big. We'll see later.** Left the irrigated section but continued along Nile valley proper to **Kosti (3).** Vast stretches of low thornbrush. **Patches of what looks like possibly a wild sorghum** (??) INSERTED LATER: (Don't think so now). One hr. scheduled stop at Kosti 10:50-11:50 & thence west. Country much drier, then finally toward **El Obeid. (4)"**

27IX "A bust mostly. Waited & waited. Finally breakfast. Ca 9:00 & Kambal came in the midst with the Senior Inspector of Agriculture – TAHA FADUL & a cousin of Kambal's. Much talk, finally a driver showed & he & I went into the country for 1 ½ hrs. Didn't see much. Ca. 2:00 they came & we had a Sundanese dinner at the cousins'. Paddled about with the right hand & all that. Then the whole gang poured into a BOUITA to go 'hunting'. He got stuck in the sand, in the midst of a sand storm & that was about it. A pleasant day for all that but collections next to nil.

28IX "Up 5:30ish. Tea and off only ½ hr late at 6:30. Things picked up right off – **Pennisetum⁸** country. The usual half wild things in the fields. The true weed is only *P. pennisetum*, but later in morning near **El Hammadi (CF) (1/2 way to Dalinj: Google: Dilling) (5)** picked up the complete introgression pattern with *P. vistorium*. It lasted for only a few villages. The millet is all pretty grassy in plant type but nice variation in seed & chaff colors. Half wild in all although one farmer had very little & said he had tried hard to get rid of it. Smut, worms, insect damage causing sterility all common, not to mention the birds. Generally preferred to **sorghum** & here called 'Aish' = 'life' = 'bread'. **In real sorghum areas. 'Aish' = 'sorghum'.** The sorghum shows considerable variation in color & seed type, fairly uniform in hood type. Staiga, smut & birds common. At Delinj at end of journey finally found a wild/weed sorghum. Could be *S. vert.* **Onyza⁹** showed up. *O. pernictata* & *D. barthing* (new) near El Hammadi & in numerous tiny waterholes on towards Delinj. The *O. barttis* is true wild & huge red awns. Immature but some seeds should grow. So some collections of all. 'Antaolieb' is name of sweet-stalked chewing. *S.* Head often a bit broomcorn-like Brown for beer, some reds are roasted in dough stage, others for bread, porridge & Kissla – much like injera – fermented & all. The rest house really rather nice & the Senior Inspector a good host. Meals & accommodations free. Think maybe Ali

⁸ Pearl millet (*Pennisetum glaucum* L.)

⁹ *Oryza glaberrima*, commonly known as African rice

Kambel tipped someone. Driver late. It's his home town & suspect he did some running about w. the truck, etc." (THEY MIGHT HAVE STAYED AT EL HAMMADI OR DILLING)

- 29IX "Up a bit before 6:00 & off eventually. Weed/wild and really wild sorghum spotted along. Apparently more & more common as we went south. Millets pretty minor S. of **Delinj** but a little grown a very unusual. Attractive grass + pennisetum showed up that looks good for a progenitor of pearl millet. Lax spike, but hairy axis with pegs & LARGE SEED. Sometimes in masses & could easily be harvested on a large scale. What is it, where does it grow & does it really have anything to do with pearl millet? Stuck a few times in mud holes & arrived just before a downpour. I am decidedly too early here & won't be able to get around because of the mud. Much of what I've collected is too green & isn't drying out." {I WONDER HOW THEY HAVE BEEN PLANNING THESE EXPEDITIONS. THIS IS THE SECOND TIME THEY MISSED THE SEED SEASON. BEFORE THEY WERE LATE – AFTER HARVEST, NOW THEY ARE EARLY.} **Kadugli rest house (6)** quite satisfactory. The rain has cooled it off & it may be a chilly sleep. Vast fields of **S. purpureo-sericeum** but all in bloom & no seed. Not really critical but would like to try the crosses."
- 30IX "Good night's sleep, but a slow start. Went SE this time, towards Telodi (7) (Sudan), but not much to see for 10 miles. Very rough & wet. Saw nothing much. Pennisetum¹⁰ X is there but scarcer. Sorghum either harvested or not headed. The late types w. very wide leaves. In town a few half-seed sorghum seen in gardens but just in bloom. Went to the little sub-station. One cotton breeder, one pathologist & one entomologist. Talk of making it a full station. Went westward 8-9 miles¹¹ & saw gobs of **S. vert (?)** over 4 meters high & in great abundance along stream beds & in swatches w. deep alluvial soil. Not elsewhere. Some villages overgrown with the stuff in fencerows. Weed sorghum not very evident. Back to sug & had four bags sown, got string & needle. To rest house for late 3:00 pm lunch & rest. Some of the agricultural people were to come to tea at 5:00 but instead we went to the cotton breeder's home about 6:00 for high tea. Very nicely done & all that. About 8:00 pm a beer party behind the rest house and buffet dinner about 10:30 nicely done as well. The conversation in Arabic, but I enjoyed the eve, but a short night & a long ride tomorrow."
- 1X "Much talk about early & late starts actually got off at 7:30 or so. Drove straight to **Delinj** (Google: Dilling, Sudan) – are sandwich in the suq & on to **El Obeid**. Hot & boring but made the whole thing in 7 hours w/o getting stuck or anything. Rested. Went to Sudan Airways but they cannot send seeds from here because no customs clearance. Will take them to **Geneina** (CF) & hope for the best. Saw more **S. verticilliflorum** than before because we knew where to look. Much north of **Kadugh (Kadugli)** for mile or so. Farthest outpost a stream bank about 8-10

¹⁰ Fountaingrass?

¹¹ Using Google Earth following the road between Kadugli and Telodi they pass a meandering stream bed about 10 miles down the road from Kadugli. I don't really see a road in that area branching off to the West, however, that does not mean that there was not something there in 1968 which they followed for 8-9 miles more.

miles N. **Dalinj** (Dilling). Great gobs of nomads going through. **Wonder if *P. violacean* is not entirely the weed race sorting out of cult pearl millet?"**

2X “Well, this was a corker - like 20 years ago in Turkey but with a slightly African flavor. Leisurely start. Cook late w. breakfast & no bill prepared for the rest house. I was to be at **airport** at 8:00. {IT LOOKS LIKE THERE IS, NOW (2013) AN AIRPORT AT DILLING, SUDAN, BUT EL OBEID IS A BIGGER CITY, CAPITAL OF THE NORTH KURDUFAN STATE AND THIS MAY HAVE BEEN WHERE HE TOOK THE FLIGHT TO FASHER} ,Breakfast arrived at 8:00, but finally got off shortly after with a lovely reception in Arabic. Arrived at airport as plane was coming in. No rush. **Flight to Fasher** (Google: Al Fashir) **and then Nyala**¹² uneventful but a little bumpy at Fasher. Picked up an Ali Elrida el Sayed Inspector of Agriculture who was to be my mentor in the area. He said you can't go to **Generina** (Google: **Al Junaynah**) from **Zarlingi** (Google: **Zalingei**)¹³ & so we'll have to change our plans – rainy season roads you see. We changed plans for an hour or so. Waited for the landrover to get ready for two hours or so. By then it was 2:00 pm & lunch time – just must take a quick bite with El Sayad. I knew what that meant, but couldn't protest very much. So we took a quick bite for another hour. At 3:00 pm we set out for a “seven hour” ride. The driver was skillful & he worked hard at it: peel-out, brake, shift, peel-out, jounce, bounce, the old teeth jarring, kidney grating, hour after hour. He pushed it as hard as he could and we did it in 8 hours flat. He didn't get stuck or lost or anything. It is a rough road. The distance is 130 miles. About 8:00 we stopped at a tea stall. A charpay appeared, a bed roll thrown over it & I was told to “sit down” (the only English spoken the entire trip). I had been sitting for 8 hours. Doesn't matter. I sat. tip. Night birds everywhere, nighthawks, owls, snipe – looking birds. Eyes shining unidentified from the brush and all bathed in moonlight. It was worth every bounce & jounce, but I was tired.” The moonlight was brilliant. Out of nowhere appeared a complete Sudanese dinner. Jial tomato & onion salad, a meat dish with olera bread, cheese, etc. We ate this together with the right hand. Washed with soap & water. Had pineapple chunks for desert and topped it all with tea from the stall. Refueled the landrover, washed up, repacked & the entire operation done in 30 minutes. A camel train passed as we ate, the ungainly shapes like fluid silver in the moonlight. On into the night a magnificent tawny & spotted leopardess slipped out into the headlights, turned and slipped leisurely into the tall grass, her long tail swooping down & curled almost into a circle at the tip. Night birds everywhere. Nighthawks, owls, snipe – looking birds. Eyes shining unidentified from the bush and all bathed in moonlight. It was worth every bounce and jounce but I was tired.

3X “Up at 6:30 reasonably & took a cold cup-splash & ready for 7:00 am tea. Much fiddle-faddle with a procession of people buck passing & vast quantities of tea drunk. Then made a tour of the town. **Gobs of weed millet. Down the big wadi found '*S. lanceolatum*' in quantity on the bottom. Very tall, branches short & splits sort of pearl-heady when young & very round at maturity.** To market & a couple of market samples. Bought some tooth brush sticks which I

¹² He is getting into the Darfur area of Sudan

¹³ Google shows this route 162 km, but it crosses some low country and a river.

think are only that. Nothing for cleaning the teeth. Then lunch & rest. Later out to tobacco center & visit w. Nicholson. Found still another wild-looking sorghum. This one with no awns & probably a residual from *S. 'lanceolatum'* x *S. 'durra'* or something. The bottomlands impressive, however, in the vast quantities of weed millet growing with other tall grasses. Possibly formed some years back but the weed is wilder here than anywhere else I've seen it. Tobacco only starting – 150 acres in area now. By law 10% of cigarettes must be Sudanese tobacco & this limits cigarette production by lack of production (of tobacco). In eve met with Mr. Driesen & had a few scotches & a mushroom soufflé'. Mrs. Driesen made all very nice indeed. Problems of getting to town & back in rainy season really tough."

- 4X "6:00 tea at 6:30 7:00 breakfast at 7:30 and 7:30 departure at 8:30. Right on time. Road to **Nerteliq** or **Nertiti (CF)** about same as others. Arrived 11:30ish. The weed millet impressive especially on wadi bottoms and all good wadis had 'ader' on the banks. Before getting to **Nertety** there was a long stretch with no cultivation and at **Nertety** the weed millet seems to have dropped out. The **adar¹⁴** has increased & is really massive in low spots. Rainfall here considerably higher ca 1000 mm. Toured about the place & collected 'adar' very abundant. The weed millet showed up on the pilot farm but not elsewhere. Later, 4:00 pm, lunch & at 5:00 hiked through tall grass and over old terraces. No collecting but interesting. Tea & back to rest house to read 'Hydrological report on **Jabel Marra¹⁵**' – notes in other book. Supper & to bed – with bugs it turned out."
- 5X "Up & off 7:00ish. Stopped at Pilot Farm office to get some cult seeds, but hardly worth it & then barreled on to **Nyala (x)**. Picked up weed millet soon & it was abundant near **Kas**. Dropped out by **Nyala** & **Adar** dropped out well before **Kas (y)**. Patterns pretty consistent. Arr. **Nyala** before 2:00 settled in **Darfur Hotel**; lunch & rest then took blanket to **Mamocos Bros**. Left it & brought a few supplies incl. 2 bottles of beer which I had to drink in my room. Supper & bed uneventful."
- 6X "A Commer truck was supposed to come at 6:00 am, but arrived at 5:40. Too dark to finish packing so called for a lamp & managed to get on the road by 5:50. A hot, very bouncy trip of 8 hours to **Fashir (z)**. A tea break & snack break on the way. Thornbush, camels, **pearl millet** & very, very flat country. One sandy stretch taken at top speed second gear & engine heat something terrific. (Note at top of page: Note: ***O. barthii* in dense stand in small waterhole ca 30 miles SSW of Fashir¹⁶**. Thornbush clay soil at edge of sand ridge. Did not collect, but appeared typical wild.) Anyway **the rest house is at airport** {MY GUESS IS THAT HE IS SPENDING THE NIGHT IN AL FASHIR} & has beer when the lounge is open – which it isn't yet at 6:10 pm! Repacked seeds into one & repacked suitcase should be ready. **No weed millet the whole way. It appears rather demanding in rainfall – not too little and not too much – same as Sénégal.** PN

¹⁴ Adar is a local name for Sudanese Sorghum. See

<http://www.fao.org/fileadmin/templates/agphome/documents/PGR/SoW1/africa/SUDAN.PDF>, Appendix 9.

¹⁵ Jabel Marra is a volcanic mountain in Sudan and is rather important in the region's geography & hydraulics.

¹⁶ Google Earth does show what appears to be a wadi in this area.

Jack R. Harlan Expedition No. 6: Sept 20 – Dec. 22, 1968 East Africa to West Africa (3 months & 2 days)

“Nyala – Fasher. {NOTE: IT APPEARS THAT HE IS IN THE SOUTHERN PART OF SUDAN, NEAR THE BORDER WITH SOUTH SUDAN}

{NOTE: AT THIS POINT IN NOTEBOOK THE NOTES GET A LITTLE CONFUSING. NEED TO GET ADI & THEM TO TRY TO STRAIGHTEN IT OUT}

{NOTE AT TOP OF PAGE 21:} “O. barthii in dense stand in small waterhole ca 30 miles SSW of Fasher thornbush clay soil at edge of sand ridge. Did not collect, but appeared typical wild.”

7X “An inspector of agriculture came & got my ticket & suitcase to check. It must be done downtown & not at the airport & Sudan Airways not accommodating. Anyway it was very nice of the Agr. Man & all was soon in order. A Sudanese morning. The plane came roughly on time unloaded, service, loaded & left vaguely on time. {WHERE IS HE IS FLYING TO? NOT FT. LAMY, CHAD, SEE 9X, BELOW}. The Jebel ridge¹⁷ that divides the watersheds between the Nile and Lake Chad is impressive. I am glad I was not driving. The Chad watershed is much greener & lush & looks good from the air. To my surprise I was met {WHERE IS HE NOW?} by a governmental official who had received a letter from Nyala. He is to look after me. If he can take care of the seeds that will be enough. We shall see.” {AT END OF ENTRY FOR 7X – NEAR TOP OF PAGE 22 - THERE IS A NOTE TO SKIP TO PAGE 25. HE HAS INSERTED HERE SOME NOTES FROM A LECTURE }

{The following appear to be notes from:

KARL R. STOCKINGER // GEORGE T. YORK // STANLEY B. KING // Pierre BEZOT // Director de l’Agriculture // D. P. HH1 (or 441) Fort Lamy

Now transplanting *décure* – durra & kuffins harvest in January. Dryland planting in May harvest in November great variations in cult sorghums. 5-600 mm belt for millets // *glaberrima*¹⁸ found in sotiva fields. Expt Sta at Moundou – must fly Rice in Bongar area – desert politically undesirable collection of sorghums made selection made for regional varieties. Same hybrids made including Tchedain X ♂ sterile.

8X {TOP OF PAGE 25. There seems to be a mix up in Harlan’s notebook. I have tried to straighten it out, but may not have it right.} “I was to take a tour at 11:00, but we spent the whole time on the seeds & finally decided it could not be done. So, I am to take them with me. It was agreed to clear them through customs at least. £40 Sudanese = \$117.65 is left over because I had no way of foreseeing cost from Khartoum & did not ship the seeds. No legal way to change it or

¹⁷ The Jebel Ridge (Google: Jebel Marrah Mountains (Arabic for ‘Bad Mountains’)) in the western part of Sudan (i.e. Darfur, which means home of the Fur, an Islamic people who have lived in that area for a very long time). This sounds like he is flying over that ridge and on into Chad, but see Oct. 9 entry where he really does fly to Ft. Lamy. There is an airport at Al Fashir and another at Al Junaynah closer to the border with Chad.

¹⁸ African rice.

Jack R. Harlan Expedition No. 6: Sept 20 – Dec. 22, 1968 East Africa to West Africa (3 months & 2 days)

even take it out. I'll try to get it to Miss Jenny Boclay, Girls secondary School, Gensira, Sudan, but I can't worry about it; part of the hazards. Dull day. No where to go."

Chad (Oct. 9 – 19, 1968; 11 days)

- 9X "Plane on time. (to **Ft. Lamy**¹⁹, the capital of Chad²⁰). Everything cleared, Gave money in sealed envelope to Sudan Airways agent. Took off. Country over-flown dry, **isolated millet farming of greater or lesser intensity the whole way. Must be a hell of a lot of millet in Africa.** At Ft. Lamy airport met Karl Stockinger, George York & Stanley King. Seeds cleared & no problems but too late in day to work on visas la Tchadienne. Hotel **{BEGINNING OF PG 26}** very expensive, but very nice. What a contrast! Civilization again after Sudan! Some rest and shopping in eve."
- 10X "Breakfast in rooms & to embassy. Got started on visa extension. Put seeds in pouch & went to Min. of Agric. & a M. Pierre Begot [p 22], Difficulties in transport & political trouble²¹ will cut down activities, but a tentative program shaping up. Then to ORSTOM²² & impressive interview & tour of the labs. Notes pp 23-24: {I think he is just now, 10X, writing down what happened since 7X. He finished his notes for 7X, then came 8X, 9 X and 10X. He sits down at the end of 10X and writes in his journal what happened on the 8th-10th, but what had happened on 10X was the interesting lecture and he had grabbed his Journal and took the notes on this lecture, which happened on 10X in the next unused space in his Journal, which was just after 7X on page 22. And he makes a note on page 22 (after the 7X entry) to "[skip to p 25]", which is 10X.

(Notes found on page 22-24: PAGE 23, with a note in red: This goes w/ page 26}

KARL R. STOCKINGER

GEORGE T. YORK

STANLEY B. KING

Pierre BEZOT

Director de l'Agriculture

D. P. HH1 (or 441) Fort Lamy

Now transplanting decure – **durra & kaffins harvest in January. Dryland planting in May harvest in November great variations in cult sorghums.**

¹⁹ Ft. Lamy was renamed N'Djamena in 1973 by Chadian President Francois Tombalbaye.

²⁰ Chad was often spelled Tchad in 1968

²¹ The first Chadian Civil War 1965-75 was in full effect in October, 1968.

²² ORSTOM: Office de Recheres Scientifique at Techniques d'Outre (Outre means overseas)

5-600 mm belt for millets

glaberrima²³ found in sotiva fields.

Expt Sta at Moundou – must fly {try?} Rice in Bongar area – desert politically undesirable collection of sorghums made selection made for regional varieties. Same hybrids made including Tchadain X ♂ sterile.

“Fó {or Pó} following these crosses at ORSTOM: Pedalogie, Hydrologies, fish of river & lake, meteorology.

“Masakwa” – Sorgo du de’crue in Nigeria.

Mr. CHEVERY, Deputy Director – soils man – ORSTOM/JCAAD. Three general fields:

- (1) Pedology, soil mapping for Tchad, evolution of soil types. Mauhdou – 300mm, & one mat 800mm and one at 500mm & decreasing laterization & Ferugination.
- (2) Hydrology – water resources & nature of water. Water solids & dydrology of Lake Chad – the amount of water & loads of the lake, etc.
- (3) Hydrobiology - 10 workers in the field, fishes, wter chemistry, ecology of the water. Nature of bottom of the lake, entomologist. Plankton.
- (4) Geology - 3 workers. Sedimentologist, salt problems about Lake Tchad. Diatoms. The whole group to work out ecological balance of the lake.

Monograph of Lake Tchad soon to be published.

{PAGE 24, in red “This goes with pg 26, meaning all of page 24. i.e. continuation of notes from lecture.}

Monographs of the rivers already out. 90% of water from Chari. The other rivers most of the rest. Logues +/- 5-6% as most is lost in swamp & runs out into Cameroons. Poulders very easily developed out of erg-like conformations under water. Soils excellent up to 10% O.M. rich in minerals but not especially saline. 3 crops of wheat & 2 of maize – 15 yrs w/o fertilizers & still excellent crops. Ground water high – subirrig. 2 meters of evaporation & therefore, poulders begin to get salty. Alkalinity more serious than salinization.

Soil maps at 1/200,000; 20 people worked on it for 10 years.

OSTROM. Pubs considerable

²³ African rice.

Waters of Chad very fresh – max conductivity 850 mmables²⁴ or so which is like Colorado R. waters. No one seems to know why but it may be due to seepage out the bottom.. Some 178 spp fish in Lake and Chari together. Much commercial fishing using nylon gill nets. Water v. shallow – a few meters pretty well all over. East side a submerged erg. {End of notes from lecture.}

{continuing with journal entry for 10X:} Back to hotel, lunch, letter writing & etc. In eve a little tour & collected wild **S.** and **O. langistaniaton**. Went out to dinner at the Clair Hotel – I liked it much better than La Tchadierine.” Back to hotel, lunch, letter writing & etc. In eve a little tour & collected **wild S.** and **O. langistanniaton**. Went out to dinner at the Chari Hotel – I liked it much better than La Tchadienne.”

11X “To embassy – a little red tape then to ministry & a young Frenchman came with us and we went out to a Jenesse Tchadienne – **Israeli paramilitary pilot farm to see a S. trial. Not much, but local type looks impressive.** Back at 11:00 to bank, but they needed my passport, so to embassy. Passport not back. To French embassy to get Cameroon transit for Karl Stockinger then to surete’ for my passport. Just sent the U.S. embassy, so to U.S. embassy & finally got it. Thence to bank & exchange \$250 to hotel for lunch & rest. In eve. To Air Afrique, bought ticket for **Maoundou** & returned & left other to be altered for Douala – Lagos. Then rented a pirogue & paddled across Chari & back in sunset & dark. To Chari again for dinner & made reservations for 13th, checked out. {THIS IS ONE BUSY MAN!}

12X “Up 4:30ish & on road by 5:30. Road better than we²⁵ had thought & arrived **Bongor** {CHAD} arrived about 11. No word of us at the Casiera & the peons could do nothing. So, we looked around a bit & came back to Bongor for lunch. No lunch available at the Hotel de Chasese but soon M. le directeur Ali Mangué, Biliam-oursi, Casier A, Bongor and M. Cochet (farm manager) showed up & whiskey, beer & beefsteaks eventually followed. All very pleasant, but it was 4:30 before we could get off. No point in staying overnight. There was also a Peace Corps girl there. Managed to get to Chain hotel about 1:00 pm {am?} & they did have rooms even if our reservations were for tomorrow. A long day & I was pooped. Can rest on Sunday. **Collections very light although vast amounts of wild S. near Ft. Lamy (which I had) and much O. longi- {longistaminata} all the way & occasional O. barthii.** At the Asian rice area, there is evidentially a lot of glaberimium mixture grown as mixture & as a weed. They have much trouble with red rice as weeds – but flowers just barely emerging & no seed . The director says he will bring somered rice Friday, - but who knows? **Local red sorghum** impressive **the whole way by its “ruchiaté”.** **Much sorghum transplanting going on.** Tried to photograph the operation once, but the men refused & would not even accept a cadeau to do it. Parareligious?” PN: “returned from Bongor to Ft. Lamy and end of day. {SENT THIS PAGE TO ADI & CAL 6-22-16}

²⁴ Not sure what this unit of conductivity is supposed to be.

²⁵ Karl Stockinger and myself

- 13X Sunday. “Up to see the boys off & then back for a snooze. Seem to be pretty tired & the stomach upset for the first time. A fine lunch, more sleep, a laundry & hike about town. All closed up. Wrote five letters mostly thank-yous: M. Margié, Dr. Kambal, Mr. Yousit, Chhada & home. Pastries instead of dinner & to bed. Much rested.
- 14X “At the muse:// Sao²⁶ culture all over **Ft. Lamy**:²⁷ // BOUTA BEGIRA a site near ORSTOM // AZGUEN a site near the Tchadieme Hotel; this one also called SAO near AIR Hotel a number of pipes but supposed to be XIII C. another site KOTOKO on banks of SERBEWEL River. The old Lake Chad at 5400 BP was on the 320.325 meter line & at least 10 times the present size. It is now at 282 m, was down to 280 in 1907 and up to 286 in 1874. Basin to the north is as low as 165 m. Rock drawings in Tibestin show grainaries & women pounding and grinding – age?? The ‘Kouri’ cow with the inflated horns is said to swim better because of it. They are very porous & act as floats – This is the one I photographed at Niamey.
- “From M. Bezot’s office: Station Agronomique de Déli à 30 km de Moundou sur la route du Kelo: Chef de Station : Mr. OBERMANSLI and Mr. DABEUDJON, Bureau á l’ONDR (batiment de la Prefecture) is to meet me at the airport at Moundou: Sent telegrams.
- “Spent all morning on visas & got all but Sierra Leone! Nigeria double entry [if it works] Niger, Cameroun & Cote d’Ivoire. Flights to Lagos are only twice a week so I either stay over night at Dousla or 4 nights. I can decide later. Packed & sorted & left the big suitcase with the manager. Uneventful.
- 15X “The usual nonsense about being an hour early, but café complet²⁸ exactly at 5:00 & hotel car left exactly at 5:30. The bill completely cleaned me out so I changed another \$50. The plane was late leaving, of course, but eventually we got off. Vast amounts of swamp & wet grasslands occasional patches of savanna. Just before **Moundou**²⁹ considerable savanna. Met by Dabeudjon who treated me to a beer & then took me to the Hotel du Chase for another café complet, then to the station at Déli. The director³⁰ blew his top; knew nothing of me, no place to stay, was just leaving for town with his wife, etc., etc. Anyway, gave me quick tour of the plots & some two year old seed, a beer & sent me off settled in hotel, lunch, rest & in eve a tour of the neighborhood: **wild S. abundant where expected along river; glaberrima rice is grown here together with the weedy Asian rice. The local S. is elegans and very impressive: ca 20 ft**

²⁶ The Sao was an ancient nation, more in Cameroon, that declined about the time that the Kotoko people became more prominent. SEE HISTORY OF CHAD IN RESOURCE FOLDER.

²⁷Note: in 1968 a civil war was in progress in Chad, in opposition to the first president since independence in about 1960. He had become increasingly autocratic and unpopular, and so he began to suppress his own people and fighting erupted. It was mainly in the north central areas and on the east side in 1968; so, JRH was not in any danger.

²⁸ Continental Breakfast

²⁹ Moundou is in southern Chad. He is flying from Ft. Lamy (modern day N'Djamena) on the west boundary of Chad: about 480 km almost due south.

³⁰ Could this be the director of the Boumo Agriculture Station?

tall, heavy stalked, large leaved, pale green, large sprangly hard a bit, brom-corny rather than guinea-type panicle; enormous stuff.”

- 16X “To Goré³¹ and back with M. Dabeudjon – *S. elegans* the whole way. Variation in panicle shape, seed color, etc, but all the same race. Interesting pattern. The millet is also all of one race. Very tall, clean, robust, medium length skin candles w. very white seeds. No weedy millet at all and no shibra visible – Definitely out of range of millet monkey business – and *S. monkey* business, too, for that matter. Both races are highly derived and elegant. Wild *S* in the expected places – i.e. stream banks of Pandé & Logone. The rice at Goré Asian with some mix of *glaberrima*. No evidently interesting paps. *O. longi* too green for seed but abundant in the wet spots everywhere. Hot ride, but roads v. good.”
- 17X PN : “Ft. Lamy” “Mostly killing time waiting for the plane. Checked with Tchad Air re. ticket. Toured the market & got some local millet, finger millet & voandzeia³² seeds. Nothing much. Finished reading Coquery, Catherine: ‘La Découverte de l’Afrique . Collection Archives Julliard, Paris, 1965 pp 252 pocketbook ed. Quite good & will be useful for references. Insects really BUGGING me! It’s pretty and peaceful here, but I’ll be glad to move on.
- 18X PN: “Fr. Lamy” “More killing time. The plane is finally leaving ca 10:00 & arriving 11:30ish. Room & valise at hotel & immediately worked up seed collection & packed all, but by then too late to do anything else but eat, rest & wait for evening. Found there was much more shopping area than I had thought but no pocket knife. Bought an expensive paperback on the Sahara & didn’t buy a \$25.00 one on the people of Africa – should get the reference, though. Did get 1 day ‘piles wonder’ for Miss. Brenby and delivered to Sudan Airways. Doubt if she’ll get them.”
- 19X PN: “Must recover \$400 for Tchad to break even; \$ in Tchad ca 40/day; 50.00+250.00+40.00+50.00=390.00” “Put seeds in pouch and went to ORSTOM and heard about **Farsha** for the first time. M. Chewery arranged for me to meet the Dir. of ORSTOM & receive some reprints on pastures work in Chad, then sent me out to the **Farsha** where the Livestock Institute³³ is. Saw specimens in herbarium & took notes. Not very much. By then late & hot & back to hotel. Little action. Did laundry.”

Cameroon (Oct. 20)

“Wrote a bunch of letters: Miss Burley, home, Consul at Banzin & Soceas at Bengin, etc. Packed, checked out, had lunch & finally off to **Doula {Cameroon}**. Disappointing the plane so late because could see very little. Savanna goes almost to Youande before forest really sets in. At Garoua still *S. ‘elegans’* & millet. Much wild rice in Ft. Lamy area visible from plane. Can identify it flying low, now. Got some specimens from Bezot – rice from Bongor – not much help but he tried.”

³¹ Gore’ Chad is 115 km to the SE of Moundou.

³² Voandzeia, also called, among other things, Bambara groundnut is similar to the peanut.

³³ I cannot find anything on a Livestock Institute in Farsha, Chad. HVH2

Nigeria (Oct. 21 – Nov. 7: 18 days)

Note: The capital of Nigeria in 1968 was Lagos. As of this writing, the capital is Abuja, a planned city in central Nigeria. In 1968 Nigeria was engaged in a civil war involving the secession of the province of Biafra from Nigeria. This war went from 1967 to 1970. Harlan needed to stay away from the fighting. The places he went were some 260 miles inland from Enugu, the capital of Biafra. He mentions nothing about this in his travel diaries. Kaduna was about 400 miles from Lagos and Harlan's last leg was to go from Kaduna to Lagos, which may have taken him somewhat close to Biafra.

21X "Saw essentially nil of Cameroon. Up early & out to airport & the usual. Mt. Cameroon seen off in distance, but much clouds. Looks well isolated by jungly waters around foot. At Lagos the customs much nicer this time, but they still have a knack about irritating you. Bristol demanded payment in advance! Got \$300 + 30 changed at bank & down to AID. Kopf not there but Allen Goodbary who knew Bill³⁴ from Turkey days. Visited & he had me out to dinner in eve. They are both from Oklahoma and she is a very prolific artist. Gobs of things in felt tip ink and silk rubbings. Nicely done. No seat for Kaduna tomorrow & only standby for 23." PN: "Lagos"

22X "Rain in am, so, loafed & read on the Sahara – finally cleared enough so I walked down to AID visited a while. A Solomon Bloom, who had worked on swine in Israel (!) now doing swine in Nigeria – some others, but I didn't stay long. Went to museum and the Benin Bronzes are back! Tremendous! A whole room full of them, including those most photographed & many others. Hiked back hot & soaked w. sweat. Beer, snooze & more reading. Blackout still on at night. PN: "Lagos"

23X "Up before 5:00 because some nut called on the phone at 4:45. Breakfast did come shortly after 5:30 & I was off to **airport** at 6:00. Cleared standby eventually, but it is now after 8:30 & no sign the plane will leave at all. (5 Bob bribe.) Finally left about 11:00 w. several empty seats. The standby all nonsense. Direct to **Kaduna**³⁵, listening to Harris all the way. AID equipment? Met by George York & Mrs. Y & taken to Samaru³⁶. Lunch, nap, visit with Orrin Webster, Karl Stockinger & Carl W. Carlton of Beltsville. No plans yet. Will stay at York's. To bed a bit late from too much talk, I suppose. PN: "Kaduna"

24X "Director (Acting) John H. Davies, of 'the Institute'. K State has contract for faculty of agric. and of Vet science {IN SMALL INSERTED LETTERS:} a K State man to be provost, but Director to be

³⁴ Jack's older brother, Bill, lived and worked in Turkey during the 1950's.

³⁵ 890 km northeast of Lagos

³⁶ The Samaru Agricultural Station started in 1922 as the research arm of the defunct Department of Agriculture of the Northern Provinces. It became Institute for Agricultural Research in 1962 as a component of Ahmadu Bello University, Zaria. It was responsible for agricultural research for the whole of the northern States of Nigeria.

Source:

<http://www.abu.edu.ng/unit/index.php?t=i&cid=20&cnm=Centres&did=182&dnm=Institute%20for%20Agricultura%20Research> Note that his web site lists 60 Academic Staff and over 500 non-academic staff almost all with African names.

English. The 'Institute of Agricultural Research' is relatively old (30 yrs?) & the University new. Tour of facilities & plant impressive. PN: "Leeuw at Shika."

{THE FOLLOWING ARE NOTES FROM HARLAN'S VISIT TO THE INSTITUTE AT SAMARU:}

{PAGE 37:} "Herbarium at IAR. Samaru 24X68

"*Sorghum bipennatum* = *Sorghastrum bipennatum sorghastrum trichopus* (stop+.) Pilger very much like *sorghastrum dipennatum* w. slender awes longer panicle – both seruffy piffle.

"*S. 'arundinaceum'* Mark & de Leeuw. 1713 10.8.66 Katsina Ala floodplain, edge of floodplain, swamp near river bank. Det by Clayton (not a v. good *Sar.* Panicle too narrow) / P.N. de Leeuw 1570 30.11.65 Bet. Kiri and Iliasu (Guari villages) Northern Nigeria 'open grassland along the road about 10-12 ft high. (clearly 2 things on sheet. (A) the black-seeded weedy / half cult thick, grains partly exerted awnless | glabrous and (B) a wild thing | *S.* vert white, hairy, awned, seed covered, etc.) / P. N. de Leeuw. 2015 27.7.68. Kaduna river near Wuya bridge. Niger Province, back swamp 10 ft high [that thing again – not good *acundmaceum* nor good *verticilliflorum* resembles *chari R. race*] / *S. 'vogelianum'* 2 specimens det. by Clayton w/o provenence (look | *S. 'landeolatum'*)

{Page 38} "*S. purpureo-sericeum* P. N. Leeuw G. I. 18.10.60 Okir 2, Lano in Gombe area Bawohi Province. Annual herb up to 4 ft high commonly found in black coarsely structured soil, flowers dark brown to rusty colour. Open *Acacia sayal* Ac. Comply. Can the woodlad. [Yep!] / *S. O. Magaji Mg 192 24.10.67 5 miles N of Tallase, Bawohi Province (labeled *S. aeth*, but obviously not so.)*

"PENNISETUM: *P. hordeoides*; *P. maina* = 'shibra'; *P. setosum* (v. small splets w. few bristles, not woolly) *P. pedicellatum* [several w. considerable variation, but it's everywhere] *P. polystachyon* (a number of them 1-2 dubious) *P. ramosum* (pegs, but no hairs, short hefts a few locations – waterlogged sites) *P. Purpureum* de Leeuw 1622 1540.65 Vom in Plateau Province; tall grass, very large tussock succulent; in drier part of the flooded area / P. N. de Leeuw Mg 8 19.10.62 line 2 point 4 Yauri Emirate open grass savanna (Wup!) This is *P. polystachyon*!) J. F. Ward 635 28.10.48 1Lorin, streamside (Yes!) / W. F. Freeman 132 26.9.47 Plateau Province but grown in a nursery from Riyom./

{Page 39} "*P. subangustum* – a couple.

"*ORYZA longistaminata* D. Philcox BP 159 20.10.58 ginnbra, Maigana 2,200 ft. with cult rice in Fadama³⁷ / D. Philcox DP 148 27.11.58 garden site Birmin Kebbi, Eadama. medium black / D.

³⁷ *Fadama* are geomorphologic phenomenon that resulted from the combination of slow river bed accretion and periods of high rainfall runoffs that caused extensive flooding and deposition of materials over the flood plains. See: http://www.academia.edu/2925663/Rice_residue_management_on_Fadama_lands_and_their_effects_on_soil_properties_and_crop_development.

Philcox DP 195 Zamo, Birnin Kebbi, rice Fadama / W. E. Freeman 135, Maska Eadama, Katsina Province / D. Clayton DC 1365 Katina swamp grassland / P. N. de Leeuw 1139 14 miles south of Damatueu, Western Barnu Survey / D. barthii (new) P. N. de Leeuw 1113 4 miles West of Damaturu 22.8.64 aquatic grassland swamp 1 ft of water amidst Acacia seyal savanna woodland /a D. Philcox DP 255 Zawro, Birnin Kebbi Sokoto R. Fedamu weed in cult rice field, (the short-awned weedy one)

{Page 40} “Stanley King

“Sorghum No 1 problem b. striga. A number of grasses & some legumes will stimulate germination. *S. hermonthica* is the bad species in W. Africa. *S. Sénégalesis* is a small flowered form of *S. hermonthica*, *S. asiatica* is the one in USA & India. Much info. on *Stroga om*” Tarr, S.A. J. Diseases of sorghum, sudangrass, and broom corn. The Commonwealth Mycological Institute, Kew, Surrey 1962. Some Sorg. May not stimulate germ. & some might be resistant or tolerant. No. 2 problem is smut – several of them all in Nigeria the wort covered kernel smut. Seed treatment at 3 pence/acre very effective. Aldrex T (shell) Ferasan D also used loose smut not as serious but can be bad. The two may hybridize (possibly in nature). A third species is head smut-not too bad as a rule. 4th is long smut usually farther north than here at lower rainfall areas. Downy mildew very erratic – more in late plantings. Sabergass sorghi on S. and S. *graminicola* on millet & latte much worse. Ergot some problem esp. on hybrid S. Oval leafspot *graminilleporus* the most serious leaf disease although there are several of them. {Page 41} Anthracnous occasionally severe *Arcospora* leafspot widespread – usually not too serious since it hits late. On millet, downey mildew is No. 1 Ergot & smut somewhat minor except on introduced materials – especially bad in breeding materials under bag. Rust on late millets can be bad. An imazer not many serious problems in Savanna area.”

25X “Dr. Hagga, Director, Sluka Station 3000 acres, 700 animals – mild prod #1 Also range beef good. Sown pastures grasses & legumes w & w/o fert. Yields est. & then tested with Friesian X Fulani hybrids. Demand for milk v. large. \$40 million heard of beef cattle in the north alone great potential for beef export. *Stylosanthes* is the range legume best adapted. *S. humilis* is an annual one. *Brachiaria brizantha* is good cue. White Fulani ca. 2000 lbs milk, crossbreds 3000, 3500. *Stylosanthes gracilis* – perennial preferred in this area & *S. humilia* to the north where it is drier.”

{Page 42} “Reference: Williams, G. G. Rice farming on the Sokoto fadama. Min. Agric. Northern Region (Nigeria) Newsletter No. 17, 1960, pg. 2-6.

Glaberrimas still useful in erratically flooding areas [rusticité] they shatter easily and volunteer crops are often harvested. Ave max flood ca 9 ft. shallow float ca 3 ft.

Summary: “(i) of the total fadama area approx half is cult. with rice this yr. and ½ is under fallow and volunteer cropping. (ii) 75% of the farms are < ½ acre in size and 25% < 0.1 acre. (iii) Fragmentation of farms is v. common and typical of the farming along the edges of the fadama. (iv) Medium and deep flooding land is roughly in equal proportions with a much smaller extent of shallow flooding ground. (v) Land subject to deep flooding is the least popular for rice farming because of the likelihood of losses from sub-mergence and wash-outs, (vi) Farmers are aware of the different capabilities of different *O. glaberrima* varieties and as a rule will sow according to the expected flood depth”

“C. G. Williams (Birnin Kabbi) {Page 42} Porter, C. B. Rice production on the Sakoto farm. Min. Agric. Northern (Nigerian) Newsletter No. 28, 1960 pg 4-7 (Sokoto) Flood starts June-July & peaks 3rd wk in Sept. & is dry by end December. Variation of crest from yr to yr great Main vars are: Dan Boto < 2 ft flood; Jan Iri 2 ft. 6” to 4 ft., baban Fari > 4 ft. wild rice a serious problem & when too severe is cut under water during rising flood – July & August. The practice is called ‘Bono’”

Curtis, David L. Sorghum in Northern Nigeria Thesis Univ of Reading May, 1966. Pp 278

Also: _____, Sorghum in West Africa Field Crop Abstracts 18 (3): 145-152 1965

In the thesis he uses: Umbellate races, tunicate race, guinea race, Chad race, Sokoto race, Keura race and Farafara race for rainy season. S.

{Page 44} The key in Curtis Thesis for wet season S.

- | | |
|---|-------------------|
| A. Panicle umbellate, loosely pendulous | 6. Umbellate Race |
| or (a) Panicles not umbellate, rachis continuous – B | |
| B. Grain completely enclosed within papery glumes | 7. Tunicate Race |
| or (b) Grain exposed. C | |
| C. Grain flattened and twisted between widely gaping glumes | 1. Guinea Race |
| or (c) Grain protruding from adpressed glumes - D | |
| D. Grain bent towards lower glume, after somewhat pointed | 4. Chad race |
| or (d) Grain not markedly twisted or bent E | |
| E. Grain round, small but still much exceeding minute, | |
| usually glabrous glumes | 5. Sokoto Race |
| or (e) Grain round, medium to large, exceeding large | |
| ovate often pilose glumes F | |
| F. Grain with dorsal hump, pericarp and end sparni | |
| colour invariably yellow | 2. Kaura Race |
| or (f) Grain usually biconvex, pericarp colour usually white, | |
| grey or read, rarely orange and endosperm white | 3. Farafara Race |

The distribution map shows guinea race predominant in a belt along and to the south & west of Niger & Bernes Rivers and {page 45} to the Kadume – Zaria region in WC part of No. Nigeria. As well as due N of Zeria. In these sections Kaura. Chad, Farafara & Sokoto area the main ones.

Soil Survey

Arc Damasak – GUBIO – MAIDUGRI – BAMA is the old Lake Chad terrace Locustorine cracking clay soil in low spots & depressions from there to the lake & natural niche for wild S. 30 miles E of Maidugari to Chad Republique big stands of wild S. roads are just lanes through it. Consensus here that Masskwa almost all in the area today in Nigeria is only very small saale elsewhere. Correlation quite good.

-Large scale movement of people from Sakoto to east in areas just S. of **Benue** (this must have gone on for a long time & result in the messy tribal redistribution). Peanuts in NE tier, cotton just S. of that Corresponding \pm to **millet** & **S.** zones.

{Page 46} Ref's from library:

"LiAgriculture nomade Volume I Congo belge, Cote d'Ivoire FAO: Mist. En valeu – dans forets Cahier No. 195b, pp 230

ERROUX, J. Les Bles du oasis sahariemas. Inst. De Rocherecher Sahariennes, Univ. dAlger. Memorie No 7, pp 179 n.d. (resieved 1864) Mnity 6X wheats incl. spelts & compactimes, but T. chicoreum found at Gotta in Chtti (Frzzon), also sec: MIEGE, E. Sur la Presennes au Meroc. De Tr. Dicorcum. Bull. de la Soc. Sc.Nat. du. Morec V, 1925, No. 3

And : QUEZEL, P. A prepur de l'etitude polynologique de quelques sediments saariene recents. Bull. liason sahareinne No. 29 Alger, Mars., 1958.

----- contribution a l'etude de la Flores et de la vegetaion du Hogger. IRS. Alar, 1954.

Gamma sterik short Kama X

Shalm, Kaura, Kafir, mkilo Blackhull Kafir, Korgi, hegori, Dobbs Dish (East Afr. Br. Seeded)

___ talls cut out

Korgi X farfara is + always a good comb. Membranaceum X farafara also good.

{Page 47} "Notes on paper by M. Sapin & another an decrue' sorghum in the S n gal valley // Potential of 180,000 ha in valley but actual varies according to populations (labor)and the size of rainy season harvest. Actual may be ca 100,000 producing some40,000 tons of grain.

upriver or East zone (above Bogh ) is a different ecological & botanical situation from down river or West Zone. The flood is earlier upriver & one can plant earlier & thereby hit the last scorching winds& therefore, risky. Downstream (West Zone) rainfall is less but flood is late, planting is late & hot winds avoided. They recommend weeding BEFORE the floody planting 1mx1m or 10,000 hills/ha and thinning to 2 plants/hill or 20,000/ha. Seed treatment for insects & smut control, fertilizing av N only at 80 kg.ha or 36 units N/ha cultivation & weeing & bird

control all v. important. Yield can be raised from present 400 kg/ha to 1200 kg/ha. Early planting important & one MIGHT fertilize before flood? (Page 47)

{Page 48} Hotel P. Navalon, Zinder, Niger, BP 161

28X “Servant crisis & slow start but finally on the road. ca 1/3 way Zaira to Kano a fadama w. sugarcane & rice fields of *O. glaberrima* w. some *O. sativa* & a little weed rice. At 35 miles S of border ponds w *O. longistaminata*. Guinea race nearly to Kano w. a little Kaura showing w. little millet to border & that getting longer headed >1m. In Niger a nice longer headed type – should collect on way back. Finally arrived on a good road – all the way > 5:00 pm. Had beers waiting from proprietor & finally let in for showers & rest. Ca 6:00. Picked up B. Bhardwaj, a millet man. Obviously, Northern Nigeria is no center of origin of either sorghum or millet and probably not rice. Sorghum very derived, uniform, neither wild nor weed forms present. Millet hardly there, very advanced & we saw little ‘chibra’ until reaching Niger, where it became abundant – weed millet not noticeable. Is sorghum East African?”

29X AT TOP OF PAGE ABOVE THE ENTRY IT SAYS: “G. Davout Food Industry Offices FAO Rome”

“Notes on interview with M. J. Mocquand. Niger government puts up the money. Would like yellow vitreous sorghums for the mill. Difficulties in propagation of products because materials from everywhere & don’t know what is really acceptable. Supplements to be added. Needs more uniformity of production; looking for S. as vitreous as possible, as uniform as possible, high yielding, insensitive to rainfall – to raise production sensitive to fertilizers. ‘Mils du Pauls’ is the long spiked one. Zongo. Trying to set up areas where seed is distributed & the whole crop purchased at a premium. Kaoura ‘Dogodogo’ smaller seeded but yellow. Dogo is a region & village some 50 km from Zinder gives better yields than millets there. 1-2 Kgm for lab test. 5 tons for commercial run & 10 tons for acceptance trials etc. Flour only now, but expected that biscuits, couscous & other things. 3000 ton elevation planned. Subsistence agr vs market agr.”
{END OF PAGE 49}

{AFTER THIS THE NOTES GO INTO A DISCUSSION OF PRODUCTION NEEDS, AND PRESENTS CALCULATIONS – IS HE GETTING TOO FAR AFIELD? AND THIS IS GETTING TOO DETAILED. I WILL NOT TRY TO TRANSCRIBE THIS PART. IF YOU REALLY WANT TO SEE THIS, VISIT NOTEBOOK PG 49-51}

{Page 51, end of computations, 29X}

“// After interview with Macquand we looked over the town, went to the market, etc. Changed money at the bank, lunch, siesta & wrote up a report for York to take to Webster. Bought two skins for Sue.

{NOW HE ENTERS NIGER}

30X PN: “to Lagos, {BUT THIS MAY HAVE BEEN SCRATCHED OUT. HE APPEARS TO BE IN ZINDER, NIGER}” “Tried to get an early start & set out east of Zinder {here he inserted with an arrow

pointing to Zinder 'NIGER'}. The first 25 miles solid millet under acacia savanna trees & rolling stabilized dunes. Depressions w. water holes, palms & sometimes lakes. Fields become spottier after that & sizeable hills showed up. At about 35-38 miles out the weed millets lined the roadsides & a few began to look like *P. violaccum* but it didn't last long. All fields had 'shibra'³⁸ but weed millets not well developed. No wild – little cult sorghum although some interesting large seeded – large headed types. We made it to Gouré³⁹ at the end of the good road & found a leak in the tank. Hobbled back {EVIDENTLY TO ZINDER} hot, dusty, thirsty, grabbed a beer & took car to garage. Excellent service at reasonable price. Repaired tank, fixed broken shock in 2 hrs for under 8\$."

{BACK INTO NIGERIA FROM NIGER}

31X "Delayed departure to photograph caparisoned horses & camels⁴⁰. Great turnout to honor the president of the Sudan due tomorrow. Very colorful robes, drums & all that. Then went on to Maradi⁴¹ – a town much smaller than Zinder – had a beer & on to Katsina, Kano & finally Samaru⁴² by 8:30 p.m. Nothing much of note except Zonga millets w. 5' heads common from near Zinder to around Maradi. By Katsina we are back into the sorghum belt and guinea race already + dominant. More Kaura towards Kano. Wild rice in a few water holes along the way. Niger customs⁴³ nice as always, Nigerian better than usual. Repacked for next trip & late to bed."

Samaru Nigeria

1XI "Up 4:30 short night but we actually got off near 5:00 a.m. Dave Andrews, Stanley King, Collin Harkness a pathologist & I off to a Kenof – jute etc. fiber station near Jemaà ± south of the plateau⁴⁴. A good deal of transplanted millet on the way. They put it in ridges in the middle of the rainy season. One short head / plant & low yield. *S.* mostly Guinea. *O.* longistimanata here & there in the expected places and *P. purpenuem* common along streams. Some *O. glaberrinea* grown as well as 'Acha' = forrio. Finally saw it growing. Finger millet as well. Stopped to see a *S.* test at Jonkwa (Google: Zonkwa) – a few look pretty good. The shorter ones tolerate higher density & obviously more heads/acre than on tall material. A number of pests serious with more rain fall. At Jemaà met a Dutch-Indonesian about to retire but in charge of a ribbon

³⁸ Intermediate forms, see "Occurance of intermediate forms (Shibras) in cultivated fields of pearl millet" ICRISAT, found at <http://oar.icrisat.org/6349/>

³⁹ Gouré' is east of Zinder

⁴⁰ Caparisoning a horse or camel means to adorn it with accouterments suitable for the occasion.

⁴¹ Maradi is some 146 miles (235 km) to the west of Zinder, but just north (54 miles), across the border, from Katsina and on the road to Kano, 120 miles to the east of Katsina.

⁴² 101 miles south from Kano to Samaru, near Zaria and the University of Northern Nigeria, founded 1962, now Ahmadu Bello University

⁴³ So, they are re-entering Nigeria from Niger.

⁴⁴ Google looks like Jema'a is west of the plateau and 56 miles SW of Jos.

softening plant since 1961. Ribbon is stripped from Kenof & softened in a rolling machine & baled at Jemàa mostly because of lack of water for retting. Another Hybiscus sp. roselle is more tolerant & easier to raise than Kenof. This plant at odds w. sack plant at Jos & all probability losing money. Some 30 million sacks of year used in Nigeria. The plant could make half that number but fiber shortage and bad management keeps production down to 11 M or less. Much fiber imported & not enough soft ribbon used. A good sack can be made w. 60% soft ribbon, but the factory has cut it to 10%, thereby raising cost of production, etc. The Dutchman was a splendid host. Beer, drinking, dinner & etc. We set up camp beds in his bedrooms & lived well.

Jemàa

2XI “Towards the farm discussing diseases, pests & problems, then climbed the **plateau of Jos**.⁴⁵ Much Acha and **transplanted millet on top**. Soils have a poor look & production looked very low for all that rainfall. Rock close to surface & much yellow soil instead of red. AT TOP OF PAGE 55: **(one station of wild S seen at Jemàa** + P. purp comm). CONTINUING NARRATIVE: “Visited some official or other at Jos, had a beer & took off for Samaru⁴⁶, arriving maybe 7:00 & then to a big benefit bar-be-q & all that at the ABU⁴⁷ club. Decorations superb. Food so-so. We left at 1:00 a.m. and the party was just getting started. 4 long days in a row.” PN: “Samaru”.

Samaru

3XI “ Sunday 7:30 breakfast. Worked on collection. Played 12 holes of golf.⁴⁸ Finished collection, sacked up & typed. Lunch, packed & drove to **Kaduna**, arriving 5:30. Saw Andy Kosage, AID troubleshooter. He didn’t think I could get to Lagos tomorrow, but one might as well start the process. The Yorks took me to the Hamdala hotel. Where I got a room to await event. The Yorks certainly took a lot of their time on my behalf, but I think they have lots of it.” PN: “**Samaru to Kaduna**”.

Kaduna

4XI “Up at 4:10 after a rather poor sleep. Settled bill, waited for airport bus. Got to airport (Old Kaduna airport) & actually bought ticket & got a seat w. no trouble at all. In fact, plane was ½ empty. Easy flight {to Lagos} & no trouble except I should have taken KLM bus. Shared a cab to Bristol {Lagos}. Walked to Embassy. 1 letter from home, and no word from anyone else. At AID Ken Kopf out again. Allan Goodbarry fixed me up shuttle for tomorrow (1:30 pm) & invited me to dinner again. Walked back hot & wet, a couple of beers & sacked out. Evening at Goodbarry’s most enjoyable. Art & music & conversation. To bed rather late.”

⁴⁵ the plateau of Jos is in central Nigeria

⁴⁶Samaru School of Agriculture. “Samaru College of Agriculture started in 1921, as an Agricultural Training Centre at Maigana, located 24 kilometers from Zaria along Zaria-Jos road.” From http://www.abu.edu.ng/dept/view_departments.php?depid=143&dept=Samaru%20College%20of%20Agriculture

⁴⁷ ABU: Ahmadu Bello Univ. at **Zaria, Nigeria**

⁴⁸ I can’t imagine JRH playing golf (HVH2).

Lagos

5XI “Up before 7:00. Big breakfast & a long repacking job. Actually got drum in the suitcase w. the skins & all. Will take excess envelopes to Ibadan in case Chheda can use them. Killed time inside. Too hot & muggy to be enjoyable out. PN: “to Ibadan”

Ibadan

6XI “Interview with G. Jackson – Botany. Site of Daima in Lake Chad dated ca 9th century AD lots of carbonized sorghum. Gave me two samples. // ‘African Notes’ Inst. of African Studies Univ. of Ibadan. Check on recent ‘Current Anthropology’. Daimi 6th C.B.C. to XI AD lower layers no grain at all. S. from ca 9th AD domestic cattle lower levels & figurines of animals – cattle humpless. Nicholas David University of Penn Museum excavating in Benue Valley % British Embassy // Mr. Garoua. // Fanké terrace (Daima) // Rock shelter nr Ibadan goes back to 10,000 BC // pottery ca 3,000 BC + later and ground axes. Wedge shaped pieces w. sheen. What are they?

Albright Interview

the fields to be covered by IITA

1. Soil Science comprehensive incl. Crop prod.
2. Plant Breeding & genetics, cereal, vegetables root crops, grain legumes, forage crops.
3. Animal Science – mostly nutrition *
4. Crop production – both preharvest to post harvest. Entomology, plant path, nematology
5. Plant Engineering
6. Climatology
7. Ag. Economics *

Trying to be international & not ‘Nigerian’. Not much on tree crops visualized except as part of the system.

FHI 27152 *S. lanceolatum* Stapf. Det. W. D. // Clayton
May 1956. Leg. J. T. Davey 17.4.47 // Barnu Province,
Rann Dist. Tilum, Fick’s Locality

FHI 27157 *S. lanceolatum* Stapf. Det by W.D. Clayton
May 1956, J. T. Davey. 23.2.49 // Bornu Prov. Ngala
dist. Wulgo Locality Riverine vegetation.

Note: Borno province is at the center of the current Boko Haram crisis in north Nigeria. (HVH2, 2-4-18)

Jack R. Harlan Expedition No. 6: Sept 20 – Dec. 22, 1968 East Africa to West Africa (3 months & 2 days)

“Quite a whirlwind morning. Breakfast over by 8:00. Chheda came & I checked out. Saw George Jackson & visited over carbonized grains of *S.* at Daima. Went to Inst. Of African Studies to get permission to keep two hems from // {his caps} CRAHAM CONNAH M.A. FSA Research Fellow in Archeology Isnt. Of African Studies, Univ. Ibadan. Also met Thurston Shaw the big wheel in archeology, and a short visit. Gave a lecture to Chheda’s class. Went to farm and saw IB8, maize, synthetic plots & pasture, saw Albright of IDTA who invited us to lunch. Then out to forestry research to check on *S.* specimens (opposite Page) {i. e. PG 58} Then to US/AID car pool; ½ to kill w. a beer & then to shuttle at 3:00 pm. The road blocked & did not get in until about 7:00. Same room as before. Had to repack to make room for the carbonized grains & do the laundry. Quite a day! Heard Nixon had won election⁴⁹ on a little radio & put it back in the suitcase. Well, tomorrow out of this mess, Inchalleh!”

{FOLLOWING, ON PAGE 60 IS SOME REALLY NEATLY PRINTED NAMES AND INFO ON ORSTOM:}

ORSTOM Personnel and Institutes from previous notes:

Office de Recherche Scientifique 7 technique

Outer-Mer Adiopodoumé B.P. 20 ph 284-45

M. Luc, Directeur

M. Bernard Bonzon – Agronomist – soils & grass

M. Frances Hallé – Botany – tuberisation 7 tree archition?

M. Jean Pernes – Geneticist – apomixes in Pam Max, etc.

IRHO – Institut de Recherche Pour les Hailes et Oleagineux B. P. 1001 ph 268-85

IFAC = Institut Francois de rechaches Fruitirea / Outre-Mer 16 rue Alphonse – Daudet B. P. 1740

Ph 232-39

IRCA = Institut de Recharches Coutchoue B. P. 1536 / ph 261-54

PN; “to Lagos”

Lagos

7XI “Well, it wasn’t all that easy. Settled bill & went down to Kingsway to spend the rest of the Nigerian money. Bought a book & some trinkets. Back to hotel, check out, cab to airport. Every annoying trick known to man employed by all the Nigerians. Bribed & tipped my way through the stupid line and arrived on the other side with enough money for one Star & one small

⁴⁹ Nixon won presidential election on Nov. 5, 1968.

Jack R. Harlan Expedition No. 6: Sept 20 – Dec. 22, 1968 East Africa to West Africa (3 months & 2 days)

Heineken. Just right except I waited 5 hours for the plane that didn't show. The Air Afrique man did give me sandwiches & beer for lunch which helped. Finally he put me on a Ghana Airways flight & I left Lagos 6 hours after arriving at the airport. Arriving in **Abidjan** late is a problem & many hotels tried before a room located at Peryols Pora one night only. Cab fare 35.00 francs or \$14! The place nice enough but miles from town. Very cute garden restaurant & the barmaid not bad either. Fairly reasonable but too far out. Will try again tomorrow. PN says "to **Abidjan**"

Cote d'Ivoire (Nov. 8 – 12: 5 days)

Abidjan

8XI {AT TOP OF PAGE 62:} "Send Richardson's article on crossing. Get Bob Ahring on the ball? They have Q on *P. anups!*"

"Cab to town & US Embassy. No mail at all nor word from S.L.! Visited with huffy US/AIR Secretary & went about my business. Got S.L. visa, a room at the Parc for 'one night only'. Called ORSTOM & got appointment for tomorrow. I think they thought I was somebody else, but we'll see. Finally contacted IRHO & a M. Gascom, geneticist, & set up for Monday. Also booked Air Afrique on Wed. 3rd to Freetown & persuaded AID to send a telegram to S.L. They were reluctant to do so & I was sort of sorry I asked. All arrangements shot the day & I was tired. Did some laundry & turned in." PN: "Red tape"

Abidjan

9XI "Panicum maximum 6x (48) rather different from 4x (32), but 5x (40) resemble the 4x very closely – West African material v. uniform, but Kenya – Tanzania variable & one 2x found there (very long & resembling local 4x) One large pop of 2n=40 & a small pop of 2n=38 in it near Ghana border ½ way up. A few 6x in I.C. (48). *P. max* the only group w x=8, other spp x=9. The 6x mostly concentrated in one region.

{AT TOP OF PAGE THERE IS A NOTE: D. Picard P60, address xxxxx SOMETHING SCRATCHED OUT} In *P. max* all four **inerstic** products often distinguished & then the agronistic sacs are formed. Timing is different from Both & Dan Ave. 3IV/cell & often difference at anaphase resulting in degeneration. Bridges & fragments suggest autopolyploid.

Agronomy M. Picard.

// 2 studies in 3 locations Achopodoumé, Bouaké, Gagnoa #1 influence of 8 forage plants on soil properties for 3 years 2 legumes *Centrosoma* prob. & *Stylosaulthes grac* 6 grasses, *P max*, *P. pmp*, *Brach mistisan*, *Synodon*, *Triposm laxum*, setaries anrips. 3 cuts/yr #2 the *Z. leg + P. max* & *Cynodon* sp. study cutting frequencies. 3 cuts vs cutting by height. *W. Styosaulte* you must not wait until it becomes liquefied & must cut earlier to get regrowth. *Curtrosema* cut ca 20 cm (6 cuts) *P. max* at bosting (9-10 cuts), *cynodon* at 40-50 cm. Rainfall here 2.4 meters & at Gagnoria 1.7 meteres & Poaraké much drier & fewer cuts. 3 times/yr on each serves soil samples are taken. Structure studies at other 2 locations but not here because 80% sand. O. M det.

{NOTE AT TOP OF PAGE 64:} “Important References below!”

“In 1966 a culture-test w. maize to test soil heterogeneity. Planted genes in Sept - Nov 1967 3rd set of samples taken here & only 2 at Boulé. Roots taken to 1.25 m deep. Density & passivity measured & water profiles in wet & dry season. But, no results yet – too soon.

F. Jurion & J. Henry. De l’agronomie itinérante a l’agriculture inters
S. fiée. Publ. de l’Institut National pour l’étude Agronomique du
Congo (INÉAC.)

PP 498 WEISSENBRUCH, S.

A. BRUXELLES 1967 [covers all Belgian work on the subject] //
Important Bibliography & ch 3”

‘Les Plante améliorantes et les prairies temporaires.’ By Comité de Liaison des Organismes de Recherche, Agricole. – Write to IRAT Nogué-Sur-Moves for this.

Description of studies given. Pangelaposs has trouble w. rust. Pueria gravos best but not potable. Centrosema does well & is better eaten. While Stylosanthes is very potable but does not grow well here – better at Benaké.

Tr. Laxum	180 tons green wt the 1 st yr highest
P. pmp	150 “ “ “ “ “
P. max	130-150 “ “ “
Cynodon	60
Digitaria	60
Centrosema	≤
Stylosanthes	≤

“They became very weedy by 3rd yr. Stylosanthe can be introduced into huch (Brousse) in the North, but here not so well adapted & too weedy. If not used the legs. Do well against weeds.

“No rust here on guatemala grass. Should be used as cut grass – but Purf can be grazed. Tr. laxum extremely vigorous – may have no seed. Ca. 9-10 ft tall in bloom!

“A very good day. M. & Mme Pernes had me to their house for lunch w. some others. Very nice affair.” PN: “ORSTOM 8:00 ... **Abidjan**”

Abidjan

10XI "Musée

Rice ladles & measurers of wood: Dan mostly w. human heads on handles; Wobe' mostly animal heads or geometric figures; Guéré human legs & torso handle, the soup representing the mouth? {ON PAGE 66 HE INCLUDED SOME LITTLE SKETCHES OF AFRICAN WOOD SPOONS WITH CARVED HANDLES}. Bought a book on the art in the museum and a ladle. ± Dan-like but Baoulé style 500 francs.

Wrote: Yorks, Home, Harry, M. Bezot,, M. Dabeudjow. Now I owe:

- (1) Goodbary ✓
- (2) Chheda ✓
- (3) Andrews
- (4) Pernes ✓
- (5) Bascon ✓

Abidjan

11XI {AT TOP OF PAGE 67 IS A NOTE:} "Important reference below!"

{AND THERE IS ANOTHER NOT AT THE TOP:} J. P. Gascon IRHO La Mé BP 13 Bingerville Cote d'Ivoire

Elaris guineensis –

E. melanococa – S. A. hybrids are fairly fertile crosses easy to make & they may be races of the same species – differences clear cut, however, growth is slower, but oil production may be alright – not studied much yet.

Wild forms mostly var 'dura' w. large shell & little pulp when crossed w 'pisifera' no shell & large Oleclle yarm get {VERY HARD TO TELL WHAT THIS IS} 100%'Tenera'.

"Hartley, C. W. S. The Oil Palm. Trop. Agric. Serv., Longman, London, 1967."

0.25 gm pollen & 4-5 gm talc for pollination cloth bags w insecticide used. One pisifera could pollinate 1000 trees.

// special bags for gathering pollen.

Pollen dried 72 hours over CaCl₂ to 2-4% moisture then in vials w. silica gel & in refrig. at -18 C° keep 1 yr. & maybe 2.

“Embryos checked & lives w 6% alemamles⁵⁰ eliminated pollen handled in sterile chambers & pollen killed between each manipulation. Finally in vacuum tubes.

{NOTE AT TOP OF PG 68:} “Send something on NMR. Can it be use for oil palm?”

“Dormancy broken – dry to 6-7% moisture in kernel 23-25% moisture required for germination. Storage in air conditioned room 2 yrs. 38-40° C but breaks dormancy 6-11 weeks. 28° C for germination. Seeds germinated on sand then to plastic sacks w. soil & compost 4 mos then to larger oven for 8-9 months. Shade reduce blast & irrigation required w. the plastic bags.

Hybrids w. Melanococa seen, easily made fertile but not terribly good, but derivations have possibilities, Leaves differ by having leaflets in one plane & different thorns. Fruits differ in color are small & all durra but some parthen genesis. Very susceptible to cercospora & lower leaves die, etc., etc. A very different race, but must be same species.

“‘Tenaria’ forms are found in nature but nothing like the selected ones. Pulp may have 60% oil & the kernel makes palm oil cake. Not used here now, but competition in Europe w. soybeans may make it not worth while to ship it & could be used locally.

“Selection against Fusarium made in nurseries by inoculation & selection. Wild pops 400 Kg/ha while selected over 3 tons/ha or better.

Manual nutrition from nursery to end of plantation. Sands low in K. to find about when to apply. 1947 oldest study shows 10th yr on requires K. N applied at planting & next year after that may be detrimental. P. no response. Mg may be useful. Trees doing poorly may do better by castration for a year or more. Irrigation studies to eliminate H₂O deficient. Water & radiation the big limiting factors. Root studies now on spread & depth. Nursery studies & germination studies.

K. applied at start of prod. (4 yrs) but this too soon & not well used. 1 Kg/tree 143/ha once a year after rains begin, 2 kg n bigger trees. Up to 3 Kg/yr on the oldest.

{TOP OF PAGE 70}

“Should get

100 kg racemes/tree/yr or more Dura and Tenera		
% fruits	65 Dura	60 Tenera
% pulp	50 Dura	70 Tenera

⁵⁰ I cannot determine what this word is.

% pulp	50 “	50 “
% oil	17 “	21 kg [differences not so great]

Other countries need more & some require ? or NPK B sanctums looking & can be easily converted No P needed for Pueria. the K costs 32 Fr. CFA per tree & doubles yield of racemes 300 F gains. This is it maintains production & without production falls to 1/2.

“We saw great gobs of genetic studies & I can’t remember very much – being in considerable misery with my first major stomach upset – a very long day completed only with determination & will power. The general breeding program is to use recurrent reciprocal relation to select & upgrade parents whether dura x tenera, tenera x tenera or pisifera x dura. They have materials now that can yield 3.5 or 4 tons/ha and in Melanesia & Indonesia where conditions are better they can get 6-7 tons, perhaps. Percent farm yields may be ½ ton & price is falling due to competition by soybean, sunflower & even peanuts.

“Oldest Plantation on the station ca 1924-26. Others in the 40’s, but work really started after WWII, late 50’s & then sizeable plantings in 1961, 2-3, 4-5, 6-7 etc. These w. advanced crosses & looking good. Much data on each tree & thousands of trees – should be a genetic gold mine someday. A recent study: 5 countries, including Congo, Kingston, Congo Brezy, Côte d’Ivoire, Malaysia & Dahomey. Each country contributes seed & pollen from the 10 most interesting trees & crosses are made. Pollen is sent out from each country to each country & hybrids made on the sites – should be interesting. Melazian material all from 4 trees originally & these perhaps from Angola region. Genetic base of all plantations very narrow everywhere. Prospection of Ivory Coast shows:” (AND HE HAS A HAND-DRAWN MAP OF IVORY COAST WITH SEVERAL AREAS DESIGNATED WITH DIFFERENT SYMBOLS AND A LEGEND:) “Symetry, perhaps based on climate.” (THE MAP SHOWS THAT THE ONLY AREAS THAT HE DENOTED AS “THE BEST” ARE ON THE SOUTHERN COAST.)

Abidjan

11XI (from PN) “IRHO 8:00 / Hubert Dyasi –PhD in Scyema ? Ed at Njala Look him up!/ IRHO”

12XI “Exhausted & rocky with bad stomach, so took it easy – walked to **Treishville**⁵¹ & bought some cloth, etc. bought lion’s⁵² claw & calabash guitar & hotel bus back, sacked out, did laundry, packed & saw a movie – J. Cocteau double header La Belle at la Bête and Orphères. Good but a little murky on the symbolism. Finished packing at 2:00 am.” PN: “M. Kammacher Laboratoire de Botanique Université Abidjan/Abidjan”

Sierra Leone (Nov. 13 – Dec. 21: 39 days) He had been hired by NUC to work there for 5 weeks.

⁵¹ a district in **Abidjan**

⁵² I believe that he gave the lion’s claw to me and I wore it on a chain around my neck for some years before I lost it.

Jack R. Harlan Expedition No. 6: Sept 20 – Dec. 22, 1968 East Africa to West Africa (3 months & 2 days)

13XI “Last minute money matters, changed \$40 more & got all bills payed. Taxi to airport, airport tax. Excess baggage for the first time. Had a couple of beers left over & even bought a couple of boxes of small cigars on the plane to finish the CFA. Got paged to the phone & it was the Embassy w. a wire from Karnes . He will meet me at the Freemont {hotel in **Freetown**}, so must have gotten my note and my wire. Plane left EARLY! Nice flight on nice equipment. Customs at Freetown very nice this time, but bus – ferry very slow to get off. Anyway, Freemont Hotel by 2:30 + a room reserved, so we must be scheduled to spend the night.”

Freetown

14XI No word from anyone yesterday. Went to US Embassy & Kernes called on phone. I am to go to Njala w. Dr. Karr. Spent morning getting passport validated for 6 weeks & finally got it when I saw the right man – a Mr. Lance. Also changed \$200. The rate is \$2.41 per pound or 1.205 per £ plus a fee. Checked out early & waited until after 4:00 before any contact made. The Karr’s brought me in to Njala somewhere near 9:00 p.m. Quarters will be in a trailer. Drinks & dinner at Kernes.”

Trailer at Njala for 33 days⁵³ (to 18XII)

15XI “ Breakfast with Karnes. Visit at office over plans & ideas. Lunch at Karnes. Visit with Dr. Brams over plans ideas. Dinner at Karnes. A few things beginning to shape up where I might be able to help. (1) strategy for developing a rice program by phases, (2) strategy for attaching the bush-fallow problem, (3) a course in ecology, (4) cytogenetics export for plant breeding to be developed by de Wet later, (5) maybe I can learn something about yams on this tour.

Puttered about unpacking & stowing away & decorating, etc.”

16XI “Long dull day in trailer. Loafed, read & hiked about some. Then a progressive dinner – dance scheduled ± called off because the Faculty club called one at last minute. Hodges’ cocktails & hors d’oeuvres. Workers’ main dish & somewhere for desert which we skipped & went to club. Not very successful but the food & drink were great. To bed at 1:00 a.m.” PN: “7:00 at Kerner white shirt & tie. Dr. Sama.”

17XI “Breakfast at Hodges overlooking Taia R. [Google: Taia River, AKA Jong River. Njala is on the banks of the Jong River.] Very nice & long, dull day must get on with my project.”

18XI “Read Rokupr reports, visited library. Toured oil palm plantation & new field with Brams. , prepared outline on “Organic Revolution #1”. PN: “Visit library / tour farm w Brams”

19XI “A Mosa Kawa came to try out for steward. Took all day to do a little dab of laundry: burned hole in sock etc. Toured upper farm w. Brams. Got some big reservations about all this, but is

⁵³ Harlan was hired for 6 weeks, but he served for 4.7 weeks. As he mentioned in his notes, nobody seemed to care what he did.

something rather than nothing.” List of references for his outline, page 75. PN: “Mosa kawa / Brams 10:00 at office”

(TOP OF PAGE 75) “Reference below:

Howell, F. Clark and Francois Bourliera / African Ecology and Human Evolution /

Aldine Publ. Co. Chicago 1963 pp 666

Monod, Theodore The late tertiary and Pleistocene in the Sahara in above pp 119-22p

And cites:

Ur Voy, Yves 1942. Les bassing du Niger / Mem Inst. Français d’Afrique noire, No. 4

Clos-Arce due, A. 1953 La fleuvre de Tombauctou / Tropiques (Paris) No. 371 :36-40

Palausi, G. 1955 Av sujet du Niger faseile dans la regon de Tombouctou, Rev. Geomorph.

Dyn, 6 :217-8 (also. Bull. Dir. Féd. Mines ex Géol. A.O.F. 1957 (20) : 143-7

Speaks of the Neolithic lakes of the Azaoued

Also paper by Quézel on fosil flora of centrol Sahara etc. altogether a must reference.

(TOP OF PAGE 76:) Ref: !!

CREAC’H P. 1941 Aliments et Alimentaton des Indigenes du Moyen Tchad (Afrique Equatoriale Franaise), Marseille.

Mentions use of some 30 wild grasses etc.”

20XI “Library work: drew up memo on what I might do here & gave to Karnes. To club in eve. A big zero.”

21XI “Hiked through the wildwood looking for wild yams – don’t think I saw any. The bush is really messy. More library; ride on the river in late aft. Very pleasant. This will be a big waste of time if I don’t get on my project. But visitors this weekend. Tomorrow date w. Emji, seminar in eve.”

22XI Emji called off the date when I met him at the club last night. He is acting Dean and Housewife as well as Dept Head ... More library work. Did seminar in evening ‘Agricultural Revolution No. 1’ Seemed to go well. West Africans resent not having more domesticates from West Africa.” PN : “(seminar) for staff and students.”

23XI “Went w. Emji to yam field. He only has: D. alota in nursery – opposite leaves & winged stems – very distinctive among this group. D. rotundata and D. carjenensis – spring stems that curl clockwise as stakes, white and yellow fleshed respectively, leaves of both opposite. D. esculenta – fine vines that curl counterclockwise. [NOW HE PUT (Chinese yams) IN BETWEEN TWO LINES

OF TEXT, BUT I AM NOT SURE TO WHICH LINE HE WAS INSERTING THIS; AND HE IS NOT AN EXPERT ON YAMS. I THINK EMJI WAS GIVING JACK ALL THIS INFORMATION ABOUT YAMS AND HE WAS TAKING NOTES. I DON'T THINK HE STUDIED YAMS AT THE KEW BEFORE COMING TO AFRICA AND COULD STILL REMEMBER THAT KIND OF DETAIL HVH2] Most of his work with the latter, but it doesn't pay in S. L. In cocoyams it is Xanthonoma that has the sagitate leaves and colocasia with perfoliate leaves. Looked at edge of bush & seemed to see wild or escaped yams. We are to go back Monday – to photograph & get specimens. Loafed rest of day away & then cocktails at 6:00 and dinner after at Karnes.” The party included: Dr. Inman (Near East Foundation), William A Dupree (US Embassy), David Imig (US/AID contact Monrovia), F. Spencer (US/AID West African Desk Washington.) “I suppose momentous decisions in the office.” Nice party anyway. PN: at bottom of page “discuss programs at U or I. /soils: / Participants 1969 Edward R. Rhodes / crop Phys: Mohammed T. Dahniya”

- 24XI [Sunday]”Breakfast (Brunch) with Hodges again. W. Larry Imman the bunch above, loafed, wrote up paper on Agric. Rev. # 1. Cocktails & dinner again in evening at Karnes with Hodges & Inman. Superb porc (local) & so the day.” PN: “Wrote Agric. Rev #1”
- 25XI “Enji was to take me to bush to see wild yams, but begged off. Gave seminar in aft about research. Don't know if anyone listened or not. Guess I'll write it down for the record anyway. Felt rather discouraged.”
- 26XI “Enji came & we went to the bush. Collected Dioscorea prachansilis with aid of a native to climb a tree. Think D. hvebiferen was there too & I didn't get it. Should go back on a sunny day anyway to photograph. Dean Neil Worker's birthday this eve. So everybody trouped in & drank his booze, but he seemed to enjoy it. Finally remembered to get eggs today.”
- 27XI “Essentially the day in the library. Beginning to get enough literature to write up something about the bush fallow thing. At least I'm learning something, but I might as well not have come, as far as everyone is concerned. Advice is cheap but thankless & probably about as it should be.”
- 28XI [Thanksgiving Day] “Just a work day here. Library again & started to put something on paper if aft. Still feel that I'm the only one interested in learning. The rest could not care less.”⁵⁴
- 29XI “More library & started to write, after a false start. ‘Maintenance of fertility under annual cropping in the west Tropics.’ Lots of references not in library, but enough to do. It will no doubt be round-filed. To club in eve. as usual & no one there but me.”

⁵⁴ Check out the entry for Dec. 1. The party could be a “bash” but he could still have these feelings at the end of the day when he is writing his log.

Jack R. Harlan Expedition No. 6: Sept 20 – Dec. 22, 1968 East Africa to West Africa (3 months & 2 days)

- 30XI “The whole day writing & it is nearly done. Did take a short hike, but hot & sticky. Rained again in eve.” PN: “Writing on cont. cropping.”
- 1XII [Sunday] “Finished the opus [PN adds: “on cont. cropping”] all but one reference that Barnes must have. Feel in a very strange position, expressing alarm over soils problems, when the soils guys are goofing it up.”⁵⁵ PN: “Thanksgiving at Karnes’ a real bash.”
- 2XII “Hiked the farm they wanted to clear for income-farming. Went up in boat & hiked through village & beyond. It started out looking very good. Soil fairly deep & well drained, grass *P. subaugustum* & not much bush. Then we hit it. Imperata cylindrea by the acre. The villagers can’t handle it & avoid it. They are using bush & there is good bush there. 1 yr rice & 1 yr cassava & then back to bush. Somebody goofed & farmed too long so in came the cogon grass. Still, it’s a nice farm & if we knew how to handle the soil could be developed for mechanized farming (I think). Maybe I saved them a headache and maybe not. Took laundry over to Karnes in eve to leave for Kawa. Had several drinks & was invited to dinner. Very nice.”
- 3XII “Off to Freetown with the Zimmermans. Gifford gets a great deal of coaching from Mrs. Z., but we made it eventually after many stops arrived at Paramount at noon. Sandwiches & beer for lunch and they left and I went to [THE FOLLOWING WAS INSERTED ABOVE THE LINE THAT STARTS WITH KINGSWAY:] “UTA for reservations home Dec. 21-22 to” Kingsway & bought some scotch - delicious after the company store booze. Also bought a ‘Benin Bronze’ & believe it is actually real.”
- 4XII “To Kingsway & aft much deliberation bought two little toys for the Karnes’ boys – a couple of Danish hams. Went back to hotel to cool off then out again and bought another ‘Benin Bronze’⁵⁶. Not as good but may be a late degenerate Benin rather than a copy. Invited Zimmerman’s for lunch & after many stops got back to Njala by 6:00 pm feeling pooped & a little rocky. Am pleased with the bronzes. Kawa had not taken the note, so I don’t know if he showed or can’t read or what.”
- 5XII “Library work and writing on the Rice Project. Karnes went to Freetown, but had us (Bostonss & Zimmermans) to dinner anyway. Youngow was the host & did a fine job.”
- 6XII “Got the rice suggestions fairly written up. Looked up how to kill *Imperata cylindrica*: 15-20 # Dalapon will do it with follow-up after. To Zimmermans in eve. Barney & Mrs. Murkle (sp?), Ethyl, Bill Hillman (tall Math teacher. Christian Scientist who lost his wife recently cerebral Malaria – no precautions, of course – others) nice party.”

⁵⁵ This feels like a real low point of this expedition.

⁵⁶ JRH gave me a Benin Bronze – a head of a man with a slight flaw in the base. (HVH2)

Jack R. Harlan Expedition No. 6: Sept 20 – Dec. 22, 1968 East Africa to West Africa (3 months & 2 days)

- 7XII “Library in AM. Finished rice suggestions. Latched onto suspense paperback in PM, then finally dug out my opus & began scanning. Not too bad after all this time. PN: “Rice project finished. How to kill *Imperata*⁵⁷”
- 8XII “Sun shone ca 9:00 so took camera & hiked to student farms & to photograph crops & bush fallow & bush fields, yams & etc. Back after noon hot & sweaty & forgot about Africa – lunch served by Mrs. King. Immersed myself in **Joseph Conrad**. Had forgotten how gripping a story teller he was. Tremendous.”
- 9XII “Hiked the oil palm nursery & much talk with Gerry Karr about it. The high & low plots turned out to be mistakes in calculations so there wasn’t much to see really. They would get reasonable extraction it would still be low, but not so terrible. Pretty hopeless ... finally got some trips set up. Will go with Ken Mahoney tomorrow.”
- 10XII “Went with Ken Mahoney to **Yele** and **Makeni**. At **Yele**, R. C. Mission and Eather Noow – he has cleared ca. 70 acres at great expense & got one crop of rice drilled in by Mahoney who had to remake the drill from wreckage. It is about the largest piece of cleared bush in S. L. What will happen nobody knows. He got about 1300 bushels (60 # here) 1100 lbs/acre. Considering all pretty good. At **Makeni** an AO & equipment pool for mechanization. Vast quantities of tractors, discs & etc. never used & never will be. A hopeless mess. Back late & to dinner at Zimmerman’s ca 9:30.”
- 11XII “Some writing in a. m. In aft to a pseudo-bali near **Mano**. They are thinking of plowing for the farmers. A 4 chiefdom adventure. The farmers to put up 7 Le/acre for a turnkey job of plowing & planting. Soil wet but not necessarily flooded in the rains. Still wet, grey, poor drainage. Enormous stand of *Chasmopodium candatum* & some *Imperata*⁵⁸. No bush & looks farmable. The most farmable piece of land I’ve seen. A long hike back through several rather attractive villages. Sav (Saw?) a palm top, etc. The grass never formed by natives because they can’t handle the grass. I can see why. Maybe we can’t either. Dinner again at Karnes. Frances wanted to talk about their trip home. Ray didn’t – I guess. But nice eve. anyway.” PN: “To boliland⁵⁹ w. Ken Mahoney”
- 12XII “Field trip to south [Jack’s insert:] (Torma Bum on the Sewa R.) & deep water rice area w. Larry Inman, Gene Brams, Van Vurre & driver. In the area bout 10,000 acres planed & harvested by

⁵⁷ *Imperata cylindrica* (alang-alang) Alang-alang is considered one of the ten worst weeds in the world, but has many uses as a traditional medicine (Kew Botanical Gardens)

⁵⁸ Two African grasses.

⁵⁹ Inland from the coastal plain is the interior plains region. In the north it comprises featureless seasonal swamps known as “**Bolilands**” (boli being a Temne word for those lands that are flooded in the rainy season and dry and hard in the dry season and on which only grass can grow). Encycloepedia Briticanica

Jack R. Harlan Expedition No. 6: Sept 20 – Dec. 22, 1968 East Africa to West Africa (3 months & 2 days)

machinery⁶⁰. Water 4-5 ft – sometimes 7-8 – sometimes shallow enough for non floating rice. Where shallow Imperate a problem. Looks like something to leave alone until there is water control; the latter may be reasonably feasible. Interesting country & stopped to go through the rutile (TiO₂) mine. Seems modern and efficient & probably making money. Also passed bauxite mine. Back via back road to Mano & ferry. Good trip.”

13XII “Wrote out introduction to the report & OK’d by Karnes. This about complete now.” {THEN HE SAYS THAT HE PRESSED SOME SPECIMENS AND MADE SKETCHES OF SEVERAL OF THEM IN THE NOTEBOOK YOU REALLY HAVE TO SEE THESE TO UNDERSTAND. AT TOP OF PAGE 87 HE WROTE:} “Reading Letters of T. E. Lawrence⁶¹” {AT BOTTOM OF PAGE, AFTER THE SKETCHES, HE WROTE:} “All these well adapted & must be learned.”

14XII “Visit with Victor Johnson, a possible Science Ed student for U of I (Physics). Broke out the project & started working all aft. To Gerry Karr’s in eve. Borrowed Bible & continued.”

15XII [Sunday] “On w. the project. Brunch at Boston’s 10:30. Lunch at Dean King’s 1:30 African chop. V. good, but mild. Writing & studying all aft & eve.”

16XII “Photographed more crops, inc. Legumes, wrote a little, conf w. Karnes & began to wind things up.”

17XII “Field trip to bolilands. Road almost to **Port Lako** & thence across to **Makenie**. Saw brother of the chief who had bought a 15,000 Le⁶² combine. Went out to see the area and slogged through water and mud for a couple of hours. Exhausting. The land is rather flat & could be smoothed up nicely with a land plane. But the chief will have problems. At any rate the **botilands** look machinable⁶³. Otherwise trip uneventful. Dinner at Zimmerman’s place.”

18XII “Big laundry, packing, sorting, & mostly drying laundry all day. Heard Karne’s tape on the student unrest. Got instructions of things to take back, etc. Big cocktail party at Karnes & dinner at Z’s again. These two {Karnes & Zimmerman} have certainly gone all out. Few others have. Packed until late at night.” {END OF NUC WORK}

To Freetown

19XII “All ready early, but by the time we got everything together & Bill Hodges was ready it was near 10:00. At Freetown. One passport check and driver’s license check. At paramount for Scottish egg & sandwich & beer. Got room & sort of collapsed checked on ticket. Ok to N.Y. only. Will check again Sat a.m. Did nothing else but sort the luggage & Chinese Restaurant in eve.

⁶⁰ I am personally surprised that Jack Harlan would think that it was a good thing to use western technology in these more basic situations. See also the entry for Dec. 17. HVH2

⁶¹ Thomas Edward Lawrence, the British author and adventurer who was “Lawrence of Arabia”.

⁶² The Sierra Leone currency is the Leone, SLL or Le.

⁶³ See note for 11XII. above.

Jack R. Harlan Expedition No. 6: Sept 20 – Dec. 22, 1968 East Africa to West Africa (3 months & 2 days)

20XII “To Kingsway & got two pillow cases & string. To hotel & made up two pkys: One reports, books etc. The other field clothes. Took them to the Embassy and after some fiddle they actually took them for the pouch! Changed 50.00 at counter ca 41.92 or slightly better than bank rates. Will do if I buy no more but will not do if I do.” {HE THEN LISTS FOUR PUBLICATIONS.}

MEILLASSOUX, Claude. Anthropologie economique des GOURO de Cote d’Ivoire
1964 Mouton & Co. Parish La Hop pp382

PAULME, Denise Les gens du Riz 1954 Letrocire Plan, Paris 8 rue Garancierè,
This is on the Kissi of Gumie.

BASDE, G. T. Niger Ibos 1966

Frank Cass & Co. Ltd. 10 Woburn Walk, London W.C.

Legendo about Y au’ss of interect Fetalise

LABOURET, Henri Paysans d’Afrique accidentale 1941 Librairise Gallimand (Probably Paris)

[THE FOLLOWING WAS ADDED TO THE END OF THE 21XII ENTRY AS AN EXTENSION OF THAT ENTRY. SEE THE END OF 21XII:] 20XII cont. “Went up to **Fourah Bay**⁶⁴ before noon got off at library & found Institute of African Studies. A Dr. Hyde assist in charge or something. Not there. Spent some time in library. Went back. Just left. Hiked towards Ford Flats and got a lift from a young Britisher in Chemistry.⁶⁵” To Hyde’s residence. Not there. Will phone later. Back to Fond Flats [?] a magnificent view. Great camaraderie as the beer flowed and flowed and flowed. Gerry Karr showed. The Hodges were there. Several S. L’s – can’t remember names, except a Jarret (sp) I fired from Jnala & now seemingly in good political position in Fourah Bay. He is starting his own Agric. Extension Program, much to the disgust of many at Njala. Various others in Math & etc. Called Hyde on phone. He eventually showed, but do not expect anything to come of it. He does know Prof. Dolby & letter does have a student there. Hiked down to Bot. gardens, wringing wet. Couple of whiskeys in room and slight snooze. Then to Tropicana in eve. Not nearly so posh as I had expected. Food passable. No entertainment & so to bed.”

Dec 21 “Stating home today! Woke early but managed to stay in bed until 7:30. Then good breakfast & then hiked the curio shops to se if there was something I couldn’t resist. No problem. Resistance easy. Check UTA nothing new on ticket so back to hotel, packed, showered put on clean clothes all around & checked out. Sitting in lobby saw: Larry Innan & wife, Marilyn, just arrived; also small daughter. Bill & Anne Hodgs & Tommy (Gerry not in sight). Gifford and Aldine Zimmerman, Gene Brams (Pat left yesterday to have a baby somewhere else), Dan

⁶⁴ Fourah Bay College was founded in 1827 as the first college in West Africa.

⁶⁵ I AM NOT SURE IF HE IS TRYING TO SAY GOOD-BY TO PEOPLE, BUT NOBODY SEEMS TO BE THERE.

Jack R. Harlan Expedition No. 6: Sept 20 – Dec. 22, 1968 East Africa to West Africa (3 months & 2 days)

Chaytor & maybe that's all. Did not enter all of yesterday's activities, to wit" He does not say in his notebook, but his pocket calendar indicates that he arrived back in Champaign on December 22.