and

Botany

by Leigh Ann Hurt

Hamilton, WWF Inter

national Plant Conser-

most striking and biologically

diverse mountains - intent on

Meandering through a

be the one species of the

plant. Restio, known to the re-

There is a lot of interest to-

day in climatic history,

because of the high

possibility of rapid global

warming, and uncer-

tainties about how natural

and artificial ecosystems

agricultural — will react.

Studies of past climate

fluctuations help to set

modern changes in

gion. He collected a small

turned to the mountain hut

A day later, it became ap

parent that the plant was not

in fact the known species

Restio mahonii, but in fact an

other species of the same

genus, previously unknown to

science This discovery

emerged because Peter Linder.

who accompanied Dr Hamilton

to Mulaup found what was

sample for checking, then re-

where he was staying

context.

for example,

Chunati Wildlife Sanctuary

by Lutfar Rahman

HE chunati wildlife sanctuary had been pushed into obscurity before it came to limelight through a seminar on 11th. 12th and 19th February '89. It is a Forest Department project for which voluntary private initiative played the main role through motivation and persuasion of the departmental officials, that is, the officials had to be motivated instead of people being motivated by the officials. Nevertheless. the sanctuary came into being and since then has been protected by the people around it. controversy over and opposition to it on grounds which were mostly flimsy and created by vested interest groups.

My eight years' association with it as honorary warden has convinced me that the officials linked with it have lacked the sincerity with which a sanctuary needs to be taken care of. There is serious contradiction between words and action of the people who are responsi-ble for its administration. No senior concerned official has ever visited the interior of the sanctuary which holds some of the rarest species of birds and animals like 'stros' (wild goat) and peacocks bestdes many other varieties. I wonder, if the concerned wing of the department has any idea about its inhabitants, their food and habitat and in some cases about the physical existence of the sanctuary itself.

A forest has to be protected from inside and outside. Strangely, no effective step has so far been taken to post any staff other than a forest guard who is also kept attached to different beat offices or other jobs not related to the sanctu-

Bangladesh can boast two most majestic animals, the Royal Bengal Tiger of Sundarbans and the elephants in concentration in this sanctuary. While the former can boast the tiger, chunati sanctuary is the only place where the country can offer to visitors for observation in a compact area of 19,000 sqr acres interwoven by game tracks like spider nets. There are people around it who deplore the existence of wild elephants on the ground that they destroy their paddy and I have observed quite a number of official expressing sympathy for them. But I harbour great doubt about the bonafide of their case in that these clamouring people are in most cases unauthorised occupants of reserve forest including people from their own de-

partment and other local influential non-peasants, either through exercise or their official authority or underhand dealings. A survey, thus, has become an absolute necessity to find out the truth which the department has been avoiding either for dubious reasons or instneerity or may be even negligence none of which is invigoration national environment, to which the government has been putting so much of stress. This action is also vital for the survival of the sanctuary.

Mentionably destructive activities like felling of trees, poaching, reclamation of reserve forest, pollution of water, indiscriminate burning of the woods etc. are going on un-

yolves special significance in that this is not a normal one but done deliberately by a section of bamboo merchants unofficially patronised by the field staff for gain in the name of 'BANSKATHI,' which is transported to towns and cities as fuel offering enormous profit at the cost of national interest. The act of issuing TPs is the charm of field staff who collect their share in the pro-

The concerned authorities have so far turned deaf ears inspite of insistence by the people of conscience all around. Since after the seminar of '89 many write-ups have appeared in different dailies of Dhaka and Chittagong. They have put up arguments for and against

on the western side of it which falls under Banskhalt U Z where political leadership lies with persons known to be patrontsing the said trades They deliberately keep their eyes closed on such anti social and anti environmental activities. It is not the need of the poor people but the greed of the wealthy timber merchants and the conniving officials that destroys the forest. Both these sections wear the mask of love for the people. It may be mentioned that there is not a single permanent homestead inside the sanctuary. So the question of homelessness does not arise here, in case the unauthorised people are evicted.Some hold the view that with human habitation on

carried out. Well, here the animals themselves have done the feasibility study and have selected their place on their own choice, as it fulfilled their requirements. The government has already recognised the facts and also has agreed to let them live there in peace. It is not a zoo that would require a feasibility study against a budget. It is the ability of the concerned human beings to understand what the animals want and where. It is for us to understand their language and not vice versa.

(b) Continuity in the process of land reclamation must be stopped immediately. The interest of the poor people, in most cases, is not involved

for the survival of the sanctuary. These steps are : here. I emphasize that this is

lic roads with bus service.

iii) Pending building of serve its inhabitants.

iv) An early survey to reoccupants, irrespective of influence and status. The reclaunabated and unless immedistage beyond repair.

vi) Getting the licenced guns around it registered with the nearest beat office as provided in Artical 37 of the Wild vii) Constant motivation steps by the field staff posted

the North for a trade ban on

tropical timber. In the run-up to the United Nations "Earth Summit" in Brazil next year, government leaders and international agencies are busy consulting each other about setting the agenda for action on environment and development for the 21st century.

however, the people themchange or deforestation.

Panoscope's survey suggests that unless people are asked about how environmental protection fits in with their dayto-day existence, caring for the environment will ultimately lose out to short-term survival

target in itself."

led by environmental groups in needs.

done by influential people these sides, it is unsuitable as a

In the lap of nature

abated. The parts of the sanctuary under Harbang. Aziz Nagar and Jaldi are opened daily to poachers and timber lifters after dusk and I am blunt to say that these happen with the connivance of the forest administration. In 1989 indiscriminate fires inside the sanctuary caused havoc destroying three fourth of the habitat of wild fowls, pheasants and similar other bird species, making the deer run from bush to bush, alarming and disturbing elephants. In other words, such fires upset the balance inside the sanctuary effecting each and every forest dweller. After such fires, deer and goats take shelter in small bushes wherever available offering excellent opportunity to poachers and hunters to shoot

The authorities are required to go into the question of fire immediately which inthis particular sanctuary. From a glimpse at them, it will reveal that most of these arguments have been put up for argument's sake only. They have stressed human requirements around the sanctuary. But the pattern of requirements has not been analysed. They stress that the poor people have to live on firewood collected from this sanctuary. This is disputable from the point of view of national and environmental necessity. Nevertheless, stress that such head-load collection of forest materials. though harmful, does not destroy the forest. The real threat of destruction comes from the following:

Timber merchants who employ people for felling big trees for making slippers on the eastern side of the sanctuary having base at Adunagar under Lohagara UZ and indigenous boat builders

wild life habitat. In reply one must remember that wild animals have been living in this patch of forest since centuries with those people around it. If they succeeded in co-existence for centuries, there is no reason, why all of a sudden, the creation of a wild life sanctuary should upset the balance. The question of population growth is sometimes put forward as an argument opposing the sanctuary's existence here. But then enough is left beyond this meagre 19,000 sqr acres of forest for their plunder. In all arguments the fact has been ignored that wild animals need a particular sort of environment created by nature in a natural forest which makes it an abode for them and it exists

Some have claimed that before establishing the sanctuary. no feasibility study has been

around it, in the name of "poor cultivators to expand their already existing unauthorised land. This section includes connivance can not be ignored.One full session of the seminar mentioned earlier. dealt entirely on the matter relating to the sanctuary, on

people of the department itself and its agents. The Chunati Range Office, from where the to protect the sanctuary.

sanctuary is to be administered, is surrounded by such unauthorised occupants. It is strange if any one recommend even a "benefit of doubt" to the intention and ignorance of the officials administering it. Destruction or creation of farm home without any legal right within one thousand years around the range office can hardly escape the notice of the field staff as well as higher officials visiting it from time to time. Here the question of

Serendipity the second day. The visitors and participants, expressed concern about its security in particular and well being in

Awareness about environmental question is growing faster in recent times and the people who opposed the sanctuary one year back are now on vation Officer, hiked up Mt its side. Now the last to under-Mulanje - one of Malawi's stand and appreciate it are those who are in the employment of the government, to finding a special grass-like administer it. If and when they plant recorded in the area. understand it, they should immediately go for certain boggy plateau above the mounsteps with a little built of sintain's treeline. Dr Hamilton cerity and feeling of patriotism found what he believed must

i) Earmarking a set of staff for the sanctuary only led by a range officer or any one of that

ii) Closing of unauthorised human tracks through the sanctuary connection east and west as a short cut, to prevent disturbing the silence inside it, as there are alternative pub-

permanent watch towers reaching which will be a timeconsuming process. Kutcha Watch Towers are to be made available for guards to protect them and for visitors to ob-

cover land from unauthorised mation process is continuing ately halted, it will reach a

v) Steps to stop fire in the forest which is devastating and threatens all will inhabitants including elephants, who live on bamboos and other shrubs. for want of which they frequently come out of the forest to find food on paddy lands damaging standing crops.

Life Preservation Act of 1974.

Viii) All saw mills and brickfields around the sanctuary are to be shifted to places beyond five miles from the boundary of the sanctuary.

ix) Replanting those varieties of trees which normally provide food for wild animals like "Horitaki" "Boira" "Amloki" which have been totally destructed creating food shortage for deer and goats.

As the magazine points out, selves have never been consulted about whether environmental protection is important for them or how they feel about proposed solutions to problems such as climate



need food. clothes and housing. Hunger can kill me tomorrow," says 17-yearold Brazilian office boy Wilson das Neves when asked for his views on the states of the environment.

North.

by journalists in Brazil. Mexico. India, Sri Lanka, Bangladesh, Kenya, Zimbabwe and Uganda shows that the business of dayto-day survival is uppermost in the concerns of ordinary people in the developing world.

OUNTERING

olution in India and elsewhere

in the developing world led to

major gains in income and

nutrition for small and large-

scale farmers, and even for the

Green Revolution Recons-

idered', is an effort to rebut

charges that technological

innovations brought to Third

World agriculture in the

1960's, chiefly benefited

wealthy, large-scale farmers at

the expense of poorer

was brought about by improved

varieties of wheat and rice.

combined with the expanded

use of fertilisers and other

Washington-based Interna-

tional Food Policy Research

Institute (IFPRI), the new

report is the first to study the

effects of the Green Revolution

on the non-agricultural sectors

data from the same villages in

southern India both before and

after the introduction of Green

Revolution agriculture, authors

Peter Hazell and C. Ramassamy

concluded that the changes in-

troduced by the new technol-

ogy benefited virtually all sec-

By collecting and analysing

by the

chemical inputs.

of the economy.

- Conducted

The Green Revolution itself

The 153-page report. The

landless poor.

criticism, a new study

says the Green Rev-

recent

worry about ecology. I

many of the responses in the Third World survey unveiled in magazine, and illustrates the growing rift between people in the developing South and those in the industrialised

His answer encapsulates the latest issue of Panoscope

While environmental proction is a major concern in North, the informal survey

Nevertheless, the survey reveals that throughout the developing world men and women from all walks of life are well aware that the planet is in the grips of an environmental crisis.

One women's group in Kenya plants potatoes both on and off season: rains have become so unpredictable that the women cannot be sure when they will reap a harvest. In neighbouring Uganda, weather patterns changed in the southwest as a result of swamp drainage, bringing malaria to areas that previously were too cool for mosquitoes.

Global warming is a problem particularly high on the North's environment agenda. But the Panoscope round-up finds that it is not a priority for

"It is imperative that the

lessons from the Green

Revolution be understood by

agricultural researchers and

policymakers," said Hazell.

With a burgeoning popula-

tion expected to double in

many developing countries

within the next 25 to 30 years.

they must understand the so-

cial and economic effects of

the Green Revolution if they

are to ensure that future agri-

cultural technology can equi-

tably feed all who are hungry."

many critics of the technol-

ogy's impact reached their

conclusions too early. Thus,

while large-scale farmers were

the first to benefit, smaller

farmers were also fond to

adopt the techniques after an

initial lag time of three to five

that wealthier farmers would

evict "tenants" from their

property or raise rents to gain

more from the increased value

of the land. But the study found

"no evidence" that the patterns

of land distribution had been

skewed to benefit landlords at

farm workers would be dis-

placed by unnecessary mech-

anisation - tractors and other

Critics also charged that

the expenses of the tenants.

Critics also were concerned

The two authors argue that

tors of the society.

who led the study.

people in the developing

Says Wilson das Neves, struggling to make ends meet in his Rio de Janeiro home:

much room for abstract concerns about global environment. Says Mexican farmer Reynaldo Huantzi: "My priorities would be combating

Global warming is a problem particularly high on the North's environment agenda. But the Panoscope round-up finds that it is not a priority for people in the developing world.

The Third World Speaks out

The rich should take care of this warming issue. They have cars. How can we, the poor, reduce our energy consumption? My family has one old fridge and one black and white TV set. Do you want me not to use them? Are you crazy.

Problems confronted in day-to-day living do not leave

But Hazell and Ramasamy

found there has been little use

of tractors, despite an initial

increase after the technology

claim the increased mechani-

sation in irrigation pumping

est ybuds wea A

buts claims that

technological in-

novations brought

agriculture in the

1960's benefited

only well-to-do

farmers at the

expense of poor

and paddy threshing which

have become widely mecha-

nised has not displaced large

Revolution would worsen abso-

lute poverty and unemploy-

ment, they, too, have proved

largely unfounded, according

est decline in the use of hired

labour, the supply of workers

declined faster and real wages

increased 10-20 per cent," he

Though there was a mod-

As for fears that the Green

amounts of hired labour.

peasants.

to Hazell.

Third World

In addition, the authors

farm equipment.

was introduced.

Looking at Green Revolution

is next."

fourth or fifth.

Kampala businessman

hunger, injustice and having a land reform. The environment

said. "As a result, annual wage

earnings almost doubled for

small-scale farmers and land-

These gains were possible.

Medium-scale farmers, who

the authors said, because

farming became more prof-

itable and growing seasons

often supplemented their in-

comes by working on other

farms, for example, gave up

second jobs to respond to the

demands of their own farms,

thus increasing the number of

working hours available for

others. Overall, income in-

creased for small, medium and

changes on non-agricultural

households, the study found

economic growth in non-farm

activities in villages and local

towns, including the busi-

nesses such as in tea shops.

restaurants, transportation and

such as rice milling and seed

distribution, also grew, if

trickled down to the non-

farming rural poor," said

Hazell. "They experienced a

virtual doubling of their

incomes, and this improved

their standard of living and

Agri-business spin-offs,

"This economic growth

personal services.

nutritional levels."

As for the impact of the

large farms, Hazell argues.

less farm labourers."

multiplied.

and tackling one without the other fails to address the prob-

Huantzi's priorities are representative of the people questioned by Panoscope. Asked to locate the environment on a sliding scale of one to five, about half placed it

be alive by then." As far as the people interviewed by the magazine are concerned, economic development and environmental protection go hand in hand

Ismail Mugerwazo was among

those who placed it last: "When

environmental experts make

projections, they quote the

year 2000 and beyond. I don't

even know whether I will still

lems they consider most pressing. Says Brazilian engineer Severino Resende: "Ecology is a key component of any development plan, but it is not a

Many Third Worlders, for example, oppose the campaign



Taking care of kitchen garden is a regular household chore for most housewives in the countryside

clearly Restio mahonii. The Restio collected on the first day was quite different. There is no doubt about this finding, because Dr Linder is the international expert on this group of plants. Fifteen years earlier. Dr Hamilton had discovered 28-32,000 year old fossil pollen of Restio, while working at a fossil site in Rwanda. More recently, the French scientist, Raymonde Bonnefille, has encountered the same pollen

and climate in southwestern biganda

other new species there. Blue-green in colour with long, thin leaves, the plant Dr Hamilton discovered is believed to flower annually, at a different time of year from the previously known species Restio mahonii.

Restio mahonii is found in

type of the same age in

Burundi. Dr Hamilton was well

aware of the Restio common to

Mt Mulanje, but never imag-

ined he would discover an-

its sole, modern, central African locality, Mt Muhi in Zaire, above 3000m - that is above the treeline. Both this and the new species grow on Mt Mulanje at about 2,000 2,200m. Though this is a much lower altitude, it is still above the treeline, which is less high as a result of the more southerly latitude and very humid climate.

The presence of Restio as a fosstl in Rwanda and Burundi, where the altitude of the treeline today is similar to Mt Muhi, is believed to be due to a period with an exceptionally cold, humid climate. This period, occurring 28-32,000 years ago, falls into the general time span of the last world ice-

day in climatic history, because of the high possibility of rapid global warming, and uncertainties about how natural and artificial ecosystems - for ex-

There is a lot of interest to-

ample, agricultural - will react. Studies of past climate fluctuations help to set modern changes in context.

The evidence of past climates based on the occurrence of fossil Restio gives another reason for conserving plants in addition to the normal arguments based on ethical and economic considerations," said Dr Hamilton. The study of the conditions in which modern plants live is essential for evaluating the climatic significance of their fossil occurrences," he

Dr Hamilton argues that this discovery gives added weight to arguments to introduce further measures to conserve Mulanje's flora. "More plant species are endemic on Mr Mulanje than in the whole of the British Isles," he said. Approximately 30 plant species exist only on this

Malawi has established several conservation sites, and Mt Mulanje already receives considerable protection as a forest reserve.In many ways, the country's Forest Department hus achieved a great deal on Mr Mulanje, but there is a need for certain further specific measures aimed at conserving the flora, and ensuring that the mountain continues to play a major catchment role.

Jutting up abruptly nearly 2.000m from the plains in the country's southern region, the mountain has peaks as high as 3 000m above scal level. It also



Dr Alan Hamilton, WWF & International Plant Conservation Officer (right) at work in the field Aided by d Ugandan assistant, he is using a probe to sample sediment in order to investigate the past history of vegetation

embraces the country's only extensive low altitude forest. along with grasslands, mountain thicket and montane evergreen forests. In addition, it is one of only two sites in Africa with blanket peat - peat occurring on sloping rather than flat ground. The other site is Rwenzori, the Mountains of the Moon, on the Uganda/Zaire border. This indicates an exceptionally humid climate.

According to Dr Hamilton. deforestation due to human encroachment, agriculture clearance and logging have already had a dramatic impact on some parts of the mountain. Serious landslides earlier this year - perhaps caused in part by tree clearance - have made as many as 40,000 Malawians homeless in the area, and over 500 people are said to be dead or missing, according to the Independent.

In addition, more than half a million people in the region are dependent on Mt Mulanje for their water. If degeneration of the forests continues, then this vital lifeline of free water from the mountain will be threatened.

The problems caused by human interference also spread their effect beyond the human population. Pine trees growing from seeds dropped from trees on the edges of plantations on the mountain's high altitude plateaux have been spreading, the invading native vegetation, suppressing the indigenous plants. And the extremely valuable native conifer. Widdringtonia nodiflora — with wood worth about 200 times that of the pines is not regeneration properly, and is, in fact, being replaced by another invasive, introduced tree Cupressus lusitanica.