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Note on Fossil Plants
from Brazil, collected
by Prof Hartt.

The collection embraces fossils
evidently of very different ages,
and as I have no very
definite information as to the
natures & dates many of
them being it may be best
merely to refer to their botan-
ical character and affinities
and to mention the geological
ages & localities such plants
would probably be referred
if found in North America
or in Europe.

1 Sporophyton

- (a) Specimens in gray shale from
cliff below Banieruka Rio Tapajs
- (b) Specimens in brown ferruginous
wash from Urutuba Rio Tapajs.

The only specimens of this
genus. Insects described in detail
are those from the Devonian of
New York, described and figured
by Prof Hall (Regent's Report 1863).
The present specimens are scarcely
distinguishable from Prof Hall's
species. The larger specimens from

Branchea correspond exactly with
 Puffballs description of *no*
 & *crapum*. Smaller and more
 compressed specimens want the
 abrupt depression toward the
 centre. All have radiating
 ridges curving rapidly toward the
 circumference. The specimens
 are noted by Puffball as probably
 carbonaceous.

The occurrence of this pec-
 uliar form of *Fucoid* in
 Brazil is very interesting, as it
 has hitherto been distributed ex-
 cepted only in the Decoria
 of North America, where it ranges
 from Japan to Pennsylvania

The Brazilian specimens
 appear to me to be of one
 species only though presenting some
 differences in different stages of
 development, and I hesitate
 to separate this species from
 & *crapum* of Hull which may
 itself be only an advanced
 stage of the *S. typum* of the
 same author. If it be thought
 I want a distinctive name
 it may be called *S. Branchea*
 Its description is - *Fund* & *spiral*
 the turns ascending rapidly, and
 in the larger specimens descending
 very abruptly toward the centre.

Surface of the frond marked with radiating ridges and furrows bending abruptly toward the outer margin which is well defined and either thickened or reflected.

Noted by Worth
also Carlif.

2. Sporangites

Specimens in shale from Rio Sapajó above Itacuba

These are sporangites ^{probably} of a Lepidodendroid plant and appear to be similar to those described by Carruthers (London Geol Magazine) as found in coals referred by him to his genus Flemingites.

They are probably Carboniferous; but I have to remark that the Lepidodendron, genus of Voegeli & Carruthers described by Carruthers have a faunal decidedly Pre-carboniferous of interpreted by North American species. Still I would not think it fair to apply strictly the facts of North American Palaeontology to the explanation of Brazilian fossils.

3 Lepidodendro?

Small trunk cut into from Barro Colorado
McClure
but may be the dentate stem of a small Lepidodendron.
Carboniferous?

One of the specimens has a few slender hooks with numerous prickle spines teeth. They may be parts of fruits?

3 Psaronius Brantii?

Scleroid trunks of the - fern with a
 sheath of aerial roots. Central axis
 large, solid, composed of numerous crowded
 vascular bundles of rounded oval and
 saccate form, cylindrical in form
 with a smooth surface and probably a
 thin cellular sheath. Cellular investment
 thick, crowded with aerial roots arranged
 in radiating lines. In the largest specimen
 the axis is four inches in diameter and
 the covering of aerial roots an inch and
 a half in thickness. Aerial roots about a line
 in diameter and showing a thin ring of Scleriform
 vessels enclosing ~~the~~ structural centre. Bundles of
 the axis several times as large and
 each showing a ~~bundle~~^{sheath} of fibres enclosing a
 thick band of Scleriform or dotted Scleriform
 form type.

Group Cupressites. It is always
and by fine specimens and
in the western hemisphere
and is referred to the
Penny Pin.
(Supposed to be the red wood)

4 Cupressus wood

Striped wood from near
Carolina.

This specimen is of the same
character microscopically with the
preceding. It is however Cupressus
and shows traces of pith
in the inner part of the cells and
has narrow and strong marked
medullary rays apparently of
4 to 10 rows of cells in one series. It
is referable to the genus *Juniperus*
of the *Chamaecyparidaceae* and of
the *Pinus* group. Found in Penn
or Texas

Creogonius wood

(not strictly
Palaeozoic)

(a) Shaped specimen from
open sand and with wings
of *Lygus* *Senna d'Este*

(b) *Tenopneustes* wood *Proterozoic*
E. Hyalms *Parvulus* of *San*
Sabruia, *New Paris*

(c) *Smilax* wood from
Arman, *New Paris*

(d) *Crucifera* from
Barreras de Casares
over. This is beautiful
shaped wood - *Styria*
the *lignites* in great *perfect*

(e) (a) *Smilax* wood as *lygus*
New Paris and *near*
Sabatunga

All other woods have
the character of that of
Wolman *creogonius*; but it will
be necessary to have a series
of specimens from *Barro*
woods for comparison. They
are probably tertiary but their
is nothing to prevent them being
referred to rocks as old as
the *Cretaceous*.

Leaves of *Creogonius* trees

Specimens from *Valapocana*
with maps of *Lygus*
of leaves of *Crucifera*
Creogonius in a *ferrous*
stone - *Probably* recent
or tertiary.

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Brent
Blunt