CHAPTER VII
WOOD INHABITING FUNGI
WOOD INHABITING FUNGI AND DYNAMICS OF SAPROPHYTISM

The question whether the types of basidiomycetes recorded in soil cause decay of felled timber and are thus saprophytes has been further examined in detail.

Fungi which cause decay of wood require moisture as such logs or timber lying in moist situations are often seen to deteriorate more rapidly than in relatively drier places. La-fuze (1937) opined greater decay was seen in wood when the wood was subjected to high temperature and long water treatment when the necessary conditions fulfilled the fungus attacking the wood. At the initial stages fungal hyphae cannot be seen by naked eye but can be seen when mycelial felts are formed. The hyphae attack and absorb cell-wall contents of xylem and medullary rays either passing through the pits or penetrating the walls. These become delignified and give reactions for cellulose and the middle lamellae is dissolved and promoting the disintegration of the material, wood thus loses weight and may be resolved to powdery masses. When once the wood is attacked by the fungus, there is no doubt that it will be destroyed unless proper treatments are done to kill the fungus. Wood-rotting fungi seldom attack living trees or at most attack the dead heartwood of living trees although there are records of the wood rotting fungi attacking the sapwood of living trees (Boyce, 1948). The presence of dark zones or bands formed due to the stimulating effect of the fungus on living cells of the host near the outer limits of decay have been supposed by White (1919) to indicate the true parasitism of the fungus.
mycelium as in the case of *Fomes applanatus*. The fungus has progressed outward to the bark and has involved the cambium which has been attacked by fungus and destroyed locally.

Hirt (1928) found the evidence of true parasitism in case of *Polyporus gilvus* on white oak. Campbell (1939), Campbell and Davidson (1938, 1939), Sleeth and Bidwell (1937) observed the parasitic action of *Daedelia unicolor*, *Polyporus glomeratus*, *Polyporus hispidus* and *Porja obliqua*. Chowdhury and Johar (1934) investigated *Schizophyllum commune* as parasites on living trees. Guinier (1933) suggested that *Stereum purpureum* can only invade wood in which the parenchyma cells are alive containing reserve materials. The fact that it is usually the first fungus to appear on felled logs in which wood parenchyma cells are still alive, supports the view which is also confirmed by Cartwright and Findley (1941) that as a cause of diseases in fruit trees, *Stereum purpureum* is of first class importance. But as a cause of rot of felled timber it is not so important.

The different saprophytic and parasitic basidiomycetous fungi growing on wood in different places of the district were collected and listed in Table $\|$.1 as follows
Table 7.1
List of wood inhabiting basidiomycetes

<table>
<thead>
<tr>
<th>Name of fungi</th>
<th>Habitat</th>
<th>locality</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basidiomycetes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hymenomycetes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Agaricaceae</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clitocybe (Fr.) quel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. adirondackensis (Peck.) sacc.</td>
<td>On stump of Areca catechu (Linn.) Delonix regia (Raf) and Dipterocarpus manni (King.) and Lagerstroemia flos - reginae (Retz.).</td>
<td>Betbari, Desang, Dhalali.</td>
</tr>
<tr>
<td>C. cyathiformis (Bull. ex. Fr. PP.) Sing</td>
<td>On decayed timber of Artocarpus - heterophylla (Lamk.) Enterolobium saman (Prain.), Eugenia jambolana (Lamk.)</td>
<td>Borbhetta Nahoroni</td>
</tr>
<tr>
<td>C. excentrica Peak</td>
<td>On dead stump of thea Sinensis (Linn.)</td>
<td>Borbhetta</td>
</tr>
<tr>
<td>C. flaccida (Sow)</td>
<td>On decaying wood of Areca catechu (Linn), Mesua ferrea (Linn.) Terminalia arjuna (W &amp; A)</td>
<td>Amguri Doigrung</td>
</tr>
<tr>
<td>C. illudens (Schwein) sacc.</td>
<td>On dead wood of Alstomia Scholaris (R. Br.) Pterospermum acerifolium (King.), Terminalia tomentosa (W &amp; A)</td>
<td>Dergaon &amp; Nowjan</td>
</tr>
<tr>
<td>C. infundibuliformis (Schaeff. ex. Fr.) Quel.</td>
<td>On Areca catechu (Linn), Cajana cajan (Mill), Dalbergia sissoo (Roxb.)</td>
<td>Demow &amp; Rajmai</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td><strong>C. miticeps PK</strong> Thea sinensis (Linn).</td>
<td>On dead logs of Mangifera indica (Linn.), Nephelium litchi (Camb.), Spondius mangifera (Willd.).</td>
<td>Betbari &amp; Desang</td>
</tr>
<tr>
<td><strong>Collybia Fr. Quel.</strong> Collybia sp.</td>
<td>On dead logs and branch of Bombax malabaricum (D.C)</td>
<td>Hatikokh &amp; Ulutoli</td>
</tr>
<tr>
<td><strong>C. acervata (Fr.) Gillet</strong></td>
<td>On dead trunk of Artocarpus chaplasha (Roxb.), Nephelium litchi (Camb.)</td>
<td>Gaurisagar &amp; Konwarpur</td>
</tr>
<tr>
<td><strong>C. dryophila (Bull. ex. Fr.) quel.</strong></td>
<td>On decayed twigs of Bambusa arundinacea (Willd.)</td>
<td>Jenganikotia</td>
</tr>
<tr>
<td><strong>C. velutipes curt.</strong></td>
<td>On dead logs and stumps of Dalbergia sissoo (Roxb.) and Dillenia indica (Linn.)</td>
<td>Julagaon</td>
</tr>
<tr>
<td><strong>Lepiota (Pers. Ex. Fr.) SF Gray</strong></td>
<td>Growing on old stump of Bauhinia purpurea (Linn.), Delonix regia (Raf.)</td>
<td>Bogidol and Dhaiali</td>
</tr>
<tr>
<td><strong>L. americana PK</strong></td>
<td>On decayed wood of Olea europea (Linn.)</td>
<td></td>
</tr>
<tr>
<td><strong>Armillaria (Fr.) quel</strong></td>
<td>On dead and decayed wood of Albizia luciede (Linn.), Garcinia xanthochymus (HK, F.), Tamarind indica</td>
<td>Sapekhati &amp; Sonari</td>
</tr>
<tr>
<td><strong>A. appendiculata PK</strong></td>
<td>On dead stump or on root of Baccareura sapida (Muell. Arg.) Dalbergia sissoo (Roxb.), Delonix regia (Raf.), Mesua ferrea (Linn.), Pterospermum acerifolium (Willd.), Samania saman (Merr.) Terminalia arjuna (W&amp;A), Thea sinensis (Linn.)</td>
<td>Angiri, Bokakhat, Borhat, Dhaiali, Harupathar and Titabar.</td>
</tr>
<tr>
<td>Cantharellus adanson.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

**C. infundibuliformis** Fr. On dead and decayed wood Jonaki Forest Reserve

**Coprinus** (Pers. ex. Fr.) S. F. Gray

<table>
<thead>
<tr>
<th>C. atramentarius</th>
<th>On decayed stumps and logs of Albizzia lucida (Linn.), Corchorus capsularis (Linn.), and decayed straw of Oryza sativa</th>
<th>Athaberi and Dhaiali</th>
</tr>
</thead>
</table>

**C. comatus** Fr.

On fallen decayed timber of Eugenia jambolana (Lamk.), Nephelium litchi (Linn.), Spondius mangifera (Willd.)

**C. micaceous** (Bull.) Fr.

On decayed logs of Areca catechu (Linn.), Cocos nuciferae (Linn.), Ficus religiosa (Linn.), Ficus benjamina (Linn.), Sapindus laurifolius (Vahl.)

**Panus Fr.**

**P. striogous** (Berk & Curt)

Growing on dead timber of Artocarpus chaplasha (Roxb.), Gmelina arborea (Roxb.), Mesua ferrea (Linn.)

**P. stypticus** Fr.

On unidentified dead wood and stump Seleng and Sonari

**Psathyrella Fr. quel**

**P. disseminata** (Pers Ex Fr.) Kuhn.

On decayed stumps and logs of Areca catechu (Linn.), Cocos nucifera (Linn.), Ficus religiosa (Linn.), Ficus benjamina (Linn.), Phoenix sylvestris (Roxb.), Psidium guayava (Linn.), Ricinus communis (Linn.), Spondius mangiferae (Willd.), Syzygium cuminii (Skeels), Terminalia arjuna (W&A), etc., and many other decayed timber.

Plate I Fig. 15
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pleurotus Fr.quel</td>
<td>On dead logs and sticks of <em>Poincians regia</em> (Boj.)</td>
<td>Golaghat, Teok and Moran</td>
</tr>
<tr>
<td>Pleurotus sp.</td>
<td>Salmalia malabaricum (Schott)</td>
<td></td>
</tr>
<tr>
<td>Plate II Fig. 16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. abscondens PK</td>
<td>On dead logs of <em>Dillenia indica</em> (Linn.)</td>
<td>Rangali</td>
</tr>
<tr>
<td>P. applicatus (Batsch ex. Fr. Sensu, Kaufmann) S.F.Gray</td>
<td>On dead branch of <em>Dillenia indica</em> (Linn.), <em>Mangifera indica</em> (Linn.)</td>
<td>Amguri and Dhaiali</td>
</tr>
<tr>
<td>P. ostreatus (Jacque. ex. Fr,) Quel.</td>
<td>Growing on dead logs of <em>Bombax malabaricum</em> (D.C.), <em>Dalbergia sissoo</em> (Roxb.), <em>Erythrina indica</em> (Lamk.), <em>Mangifera indica</em> (Linn.), <em>Nepheleium litchi</em> (Camb)</td>
<td>In several places of the district.</td>
</tr>
<tr>
<td>P. petaloides (Bull. ex Fr.)</td>
<td>On dead logs of <em>Morus alba</em> (Willd.), <em>Premna bengalensis</em> (Clarke), <em>Tamarindus indica</em> (Linn)</td>
<td>Dolbagan and Sonari</td>
</tr>
<tr>
<td>P. sapidus (Schulzer. apud. Kalchbr.) Sacc.</td>
<td>On logs and stumps of <em>Moringa oleifera</em> (Lam.), <em>Prunus persica</em> (Benth &amp; Hook), <em>Shorea robusta</em> (Gaertn.)</td>
<td>Jenganikotia and Ulutoli</td>
</tr>
<tr>
<td>P. serotinoides PK.</td>
<td>On dead logs, branch and sticks of <em>Eugenia jambolāna</em> (Lamk.), <em>Ficus bēnjamīna</em> (Linn.), <em>Gossypium herbarium</em> (Linn.), <em>Poinciana regia</em> (Boj.)</td>
<td>Jorhat and Sibsagar</td>
</tr>
<tr>
<td>Crepidotus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. applanatus pers. Fr.</td>
<td>On <em>Baccaurea sapida</em> (Muell. Arg.) <em>Garainia pedunculata</em> (Roxb.)</td>
<td>Dolbagan and Nitaipukhuri</td>
</tr>
</tbody>
</table>
C. mollis (Schaeff Fr.) On dead logs and stumps of Amoora wallichi (King), Dillenia indica (Linn), Emblica officinalis (Gaertn) Ervatima divaricata.

C. versutus Peck sacc. On Artocarpus chaplasha (Roxb.), Dalbergia sissoo (Roxb.), Heteropanax fragrans (Seem), Tetramales nudiflorae.

Paxillus Fr.

P. involutus Fr. On dead logs of Delonix regia (Raf.), Dillenia indica (Linn.)

Hypholoma Fr.

H. appendiculatum (Bull) On stumps of Mangifera indica (Linn.)

H. perplexum PK On old stumps of Bombax malabaricum (DC), Erythrina indica (Lamk).

H. sublateritum (Schaeff) Around old stump and on decayed wood.

Pholiota Fr.

P. adiposa Fr. On stumps and dead trunks of Albizzia procera (Benth) Sterculia alata (Roxb).

P. squarrosa Mull On stumps of Dillenia indica (Linn.), Pterospermum acerifolium (Willd.), Kamerindus indica (Linn.)

Omphalia Fr.

O. campanella Batsch On rotten logs and sticks Chakalia and Desow.
<table>
<thead>
<tr>
<th>Species</th>
<th>Location Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>O. umbelliferae</em> (Linn)</td>
<td>On dead stumps, twigs and sticks</td>
</tr>
<tr>
<td><em>Marasmius</em> Fr.</td>
<td>Bolhat and Safrai</td>
</tr>
<tr>
<td><em>M. androsaceus</em> (L. ex. Fr.)</td>
<td>Growing on dead twigs and sticks</td>
</tr>
<tr>
<td><em>M. candidus</em> (Bott. ex. Fr.)</td>
<td>On dead logs of cocos nuciferae (Linn.), on dead twigs of Eugenia jambolana (Lamk), on bark of Premna bengalensis (Clarke).</td>
</tr>
<tr>
<td><em>M. dichrons</em></td>
<td>On Bambusa tulda</td>
</tr>
<tr>
<td><em>M. epiphyllus</em> Fr.</td>
<td>On fallen leaves and twigs</td>
</tr>
<tr>
<td><em>M. equicrinis</em></td>
<td>On dead twigs of Thea sinensis (Linn.)</td>
</tr>
<tr>
<td><em>M. foetidus</em> (Sow. ex. Fr)</td>
<td>On decayed sticks, branches and logs</td>
</tr>
<tr>
<td><em>M. longipes</em> PK</td>
<td>Athabari, Demow, Dekhari, Jorhat, and Golaghat.</td>
</tr>
<tr>
<td><em>M. nigripes</em> (Schw.) Sing</td>
<td>On dead sticks and straw</td>
</tr>
<tr>
<td><em>M. ramealis</em> (Bull. ex. Fr.)</td>
<td>Sepon and Sonari</td>
</tr>
<tr>
<td><em>M. rotula</em> Fr.</td>
<td>On dead woods, sticks and leaves</td>
</tr>
<tr>
<td><em>Mycena</em> (Pers. ex. Fr.) S.F.Gray</td>
<td>Konwarpur and Kordoiguri</td>
</tr>
<tr>
<td><em>M. alcalina</em> Fr. Quel</td>
<td>Growing on dead and decayed wood of Albizzia lucida (Linn.), Eugenia jambolana (Lamk.)</td>
</tr>
</tbody>
</table>
**M. corticola** (Pers. ex. Fr.) On the bark of *Eugenia jambolana* (Lamk), *Tamarindus indica* (Linn.)

**M. haematopa** (Pers. ex. Fr.) On dead logs of *vetica lancifolia* (Bl)

**M. qalericulata** (Scop. ex. Fr.) On decayed stump of *Areca catechu* (Linn.)

**Troquia Fr.**

**T. crispa** (Fr.) On *Eugenia jambolana* (Lamk), *Psidium guayava* (Linn.), *Mimusops elengii* (Linn)

**Lentinus Fr.**

**L. praerigidus** (Berk) On dead trunk of *Butea monosperma* (Taub), *Cedrela toona* (Roxb.)

**L. revalatus** (Berk) On fallen stump of *cocos nucifera* (Linn)

**L. squarrulosus** Mont. Growing on *Mesua ferrea* (Linn.), *Sterculia alata* (Roxb.), *Vatica lancaefolia* (Bl)

**L. strigosus** Fr. On dead stumps of *cedrela toona* (Roxb.), *Gmelina arborea* (Roxb.), *Nephelium litchi* (Camb)

**L. lepideus** Fr. On dead logs, stumps of *Albizia lucida* (Linn.), *Areca catechu* (Linn.), *Eugenia jambolana* (Lamk)

**Schizophyllum Fr.**

**S. commune** (Fr.) On dead stumps, logs, branches and twigs of *Acacia catechu* (Willd)

**Plate II Fig. 17**

**Plate III Fig. 18**

- Dupdra, Mezenga
- Sepon
- Cherkapar
- Gohain gaon and Geleki
- Chamuguri and Harupathar
- Naphuk
- Golaghat and Gomari
- Gargaon and Mezenga
- Amguri, Dhaiali and Namti-Chariali.

**In almost all places of the district.**
Albizzia lebbek (Benth.)
A. lucida (Linn), A. procera (Benth), Alstonia scholaris (R. Br),
Anacardium occidentale (Linn), Anona squamosa (Linn), Areca catechu (Linn)
Artocarpus integrifolia (Linn), Averrhoa carambola (Linn); Adadirachta indica (Linn),
Baccaurea sapida (Muell. Arg.), Bambusa arundinacea (Willd), B. ballossa (Roxb),
Bauhinia variegata (Linn), Bischoffia javanica (Bl.),
Bursera serrata (Calchbr),
Butea monosperma (Lamk), Calamus tenuis (Roxb.),
C. viminalis (Willd.),
Cajanas cajum (L) Mills
Cassia fistula (Linn),
Cedrela toona (Roxb), Citrus decumena (Linn.), Cocos nuciferae (Linn.),
Cordia myxa (Linn.),
Corchorus capsularis (Linn.)
Dalbergia sissoo (Roxb.),
Delonix regia (Raf.),
Dendrocalamus hemiltonii (Nees & Arn.), D. mastersii,
Dillenia indica (Linn.),
Dipercarpus mannii (King),
Emblica officinalis (Gaertn.),
Duabanga sonnertioides (Ham),
Erianthus elephantinus (HK.f.),
Eugenia jambolana (Lamk),
Ficus banghalensis (Linn),
F. benjamina (Linn),
Garcinia xanthochymus (HK.f.)
G. pendunculata (Roxb.)
Gmelina arborea (Linn),
Imperata cylindrica (Beauv.)
Kaye a assamica (King),
Lagerstroemia flos-reginae
(Retz), Livistonia jenkinsiana
(Griff), Mangifera indica (Linn.)
Melia azadirach (Linn.),
Mensonia dipikii, Mesua ferrea
(Linn), Mezoneurum culculatum
(W&A), Nephelium litchi (Camb.),
Or oxylon indicum (Vent.),
Phoenix sylvestris (Roxb),
Phragmites sp., Pseudostachyum
polymorphism (Murr), Psidium
guava (Linn), Pterospermum
acerifolium (Willd.), Punica
granatum (Linn.), Salmalia
malabarica (Schott), Sapindus
laurifolius (Vahl.), Shorea robusta
(Gaertn.), Spondius mangifera
(Willd), Tamarindus indica (Linn),
Terminia arjuna (W & Arn.),
T. catappa (Linn), T. chebula (Retz),
T. tomentosa (W&A), Thea sinensis
(Linn.), Zizyphus mauritiana (Lamk),
vatica lancaefolia (Bl.).

Growing on dead logs and branches
of Aliizzia lucieda (Linn), Areca
catechu (Linn), Cassia fistula
(Linn.), Dalbergia sissoo (Roxb.
ex. Dc.), Dillenia indica (Linn),
Kaye a assamica (King), Pterospermum
acerifolium (Willd.).

S. radiatus
(Swartz). Fr.

Bamunbari,
Bebejia,
Ghilaguri,
Merapani.
**S. umbrinum** (Hook)
On dead branches, sticks or logs of Bambusa aruncinacea (Willd.), Kamarfalia, Bauhinia variegata (Linn.), Cassia Mariani, fistula (Linn.), Delonix regia (Raf.), Rongajan, Dillenia indica (Linn.), Emblica officinalis (Gaertn.), Mesua ferrea (Linn.), Shorea robusta (Gaertn.).

**Polyporaceae**

**Daedelia pers ex. Fr.**

**D. ambiqua** (Berk.)
On Albizzia procera (Benth.), Dalbergia sissoo (Roxb. ex. Dc.) Dipterocarpus mannii (King), Pterospermum acerifolium (Willd.).

**D. confraqosa** (Bolt. ex. Fr.)
Noted on Doabanga sonertioides (Ham.), Gmelina arborea (Linn.), Terminalia arjuna (Wt. & Arn.), Tetramales nudiflorae (R. Br.) and also on wounded portion of living trees.

**D. elegans** (Spreng ex. Fr.)
On stumps of dead unidentified trees.

**D. farinacea** (Fr.)
On dead wood of samania saman (Merr) and Terminalia catappa (Linn).

**D. flavida** Lev.
On Bambusa vulgaris (Sehrad), Shorea robusta (Gaertn.).

**D. quercina** (L. ex. Fr.)
Noted on Albizzia procera (Benth.), Cassia fistula (Linn.), Gmelina arborea (Linn.), Terminalia paniculata (Roth).

**D. unicolor** (Bull. ex. Fr.).
On dead logs and stumps of Bischoffia javanica (Bl), Dipterocarpus mannii (King), Tetramales nudiflorae (R. Br.).

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| **Favolus** Beauv emend Fries | On dead logs and branches of Butea monosperma, Lamk (Taub), Eugenia jambulana (Lamk.), Erythrina indica (Lamk.), Quercus ruber (L.) |
| **F.alveolaris** (DC. ex. Fr.) | Dhaialii, Teok and Titabar |
| *Quel* | On dead logs and branches of Butea monosperma, Lamk (Taub), Eugenia jambulana (Lamk.), Erythrina indica (Lamk.), Quercus ruber (L.) |
| **F.brasiliensis** Fr. | On dead wood noted on Dalbergia sissoo (Rob) Ficus religiosa (Linn.) |
| **F.canadensis** Klotsch | Golaghat |
| **F.canadensis** Klotzsch | On dead logs of Duabanga sonnertioides (Ham). Mangifera indica (Linn.) |
| **F.hepatica** Fr. | Amguri and Jhanji |
| **F.pallida** B&Rav. | On wood of Bischoffia javanica (B). |
| **Fistulina** | Chilonijan and Gomari |
| **F.applanatus** (Pers. ex. Wallr) Gill. | On dead stumps of Dalbergia sissoo (Rob) and Thea sinensis (Linn.) |
| **F.conchatus** (Pers. ex. Fr.) Gill. | Bakata and Nahoroni |
| **F.elegans** Wakefield | On dead sometimes on living trees of Accacia catechu (Willd.), Phoebe goaleparensis, Shorea assamica |
| **F.elegans** Wakefield | Lower Doyang and Doigrung and Nambar. |
| **F.elegans** Wakefield | On dead or living trees of Shorea robusta (Gaertn.) |
| **F.fomentarius** (L. ex. Fr.) Kickx. | Kumar gaon. |
| **F.fomentarius** (L. ex. Fr.) Kickx. | On logs and trees of Accacia catechu (Willd.), Cedrela toona (Roxb.), Dipterocarpus mannii (King), Phoebe goaleparensis, Terminalia tomentosa (Bedd). |
| **F.fraxineus** (Bull. ex. Fr.) cooke. | Doyang and Naphuk. |
| **F.fraxineus** (Bull. ex. Fr.) cooke. | On dead wood of Quercus ruber (L.). |
| **F.fraxineus** (Bull. ex. Fr.) cooke. | Bokotial |
F.fraxinophilous. Peck On dead or living wood of Salix tetrasperma (Roxb.)

F.igniarius (L.ex.Fr.) Kickx. On dead trunks of Albizia procera (Benth.), Artocarpus chaplasha (Roxb.), Bischofia javanica (Bl.), Cassia fistula (Linn.), Tetramales nudiflorae (R.Br.) and on some living trees.

F.lamaeensis (Murrill.) On dead wood of Dalbergra sacc & Trott. Melia azadirach (Linn.), Mesua ferrea (Linn.), Thea sinensis (Linn.)

F.lignosus (Klotzsch.) On stump of Dalbergia sissoo (Roxb.), Thea sinensis (Linn.).

F.lividus (Kalchbr.) On Accacia catechu (Linn.) and Prunus communis (Hudson).

F.marmoratus (B&C) cooke On dead logs of Flacourtia jangomas (Miq.), Garcinia xanthochymus (HK.F.)

F.pectinatus On dead and living roots of unidentified tree

F.rimosus (Berk) cooke On dead or living trees of Doabanga somnertioides (Ham.), Samania saman (Merr.), Shorea robusta (Gaertn.), Terminalia myriocarpa (Heurok & Muck).

F.senex. Nees and Mont On dead and living trees of Pterospermum acerifolium (Willd.), Eugenia jambulana (Lamk.), Ficus religiosa (Linn.), and stump of Terminalia tomentosa (W & A).
**Ganoderma**

*G. lucidum* (Leyes.) Karst.

Plate III Fig. 19

On stump of Albizzia lucida (Linn.),*Accacia catechu* (Willd.),*Bambusa vulgaris* (Schrad.),*Delonix regia* (Ref.),*Duabanga sonnertioides* Ulutoli. (Ham),*Gmelina arborea* (Linn.), *Mangifera indica* (Linn.), *Salmalia malabarica* (Schott.),*Shorea robusta* (Gaertn.), *Mitrephora tomentosa* (HK.f.&T)

**Hexagona pollini**

emend Fries

On dead branch of Dalbergia sissoo (Roxb) and *Thea sinensis* (Linn.)

**H. discopoda** Pat & Ham

On dead logs of Albizia procer a (Benth).

**H. variegata** Berk

On dead unidentified wood

**Lenzites** (Fries)

On dead post of Mesua ferrea Jamuna Road (Linn.).

**L. adusta** Masses

On dead logs of Mesua ferrea (Linn.),*Shorea robusta* (Gaertn.).

**L. saepieria** Wulf, ex. Fr.

On dead trunks and logs of wood.

**L. striata** swartz

On dead wood of *Aescularis indica* (Calchbr.),*Terminalia tomentosa* (Bedd).

**Merulius** Fr.

**M. lacrymans** Fr.

On dead wood and timber of *Gmelina arborea* (Linn.),*Lagerstroemia flos reginae* (Retz),*Shorea robusta* (Gaertn.).*Pterospermum dichoi,* Jamuguri, *Jengani-kotia.*
acercifolium (Willd), Terminalia catappa (Linn.), and some unidentified angiospermic species

**Polyporus Micheli ex Fr.**

**Polyporus sp.**  
On dead stumps of Bambusa arundinacea (Willd.)

**P. arcularius**  
(Batsch.ex.)Fr.  
On dead branch and sticks of Albizia lucida (Linn.), Areca catechu (Linn.), Bambusa balooa (Roxb.), Dillenia indica (Linn.), Eugenia jambolana (Lamk.), Mangifera indica (Linn.), Mimusops elengii (Linn.), Nephelium litchi (Camb.), Prunus communis (Hudson)

**P. adustus (Willd.) Fr.**  
On the stump of Artocarpus chaplasha (Roxb.), Desoxylum hemiltonii, Illex

**P. borealis Fr.**  
On dead logs of wood

Plate VII Fig. 28

**P. elengans Fr.**  
On dead trunks of Albizia procera (Benth), Shorea robusta (Gaertn.), Aegle marmelos (Corr.).

**P. frondosus Fr.**  
On dead logs of Artocarpus heterophylla (Lamk.), Delonix regia (Roxb.), Dalbergia sissoo (Roxb.), Tetrâmales nudiflorae (R.Br.)

**P. brumalis (Pers. ex Fr.)**  
Plate IV Fig. 21

**P. balsameus Peck**  
On dead trunks of cassia javanica (Vell.), Dalbergia sissoo, Safrai (Roxb.)

Dichoi

Dhaiali and Jenganikotia

Amguri, Dhaiali, Jenganikotia, Ulutoli and many other places.

Borpothar, Morioni and Titabar

Jorhat

Kenduguri

Namti, Kakajan

Mechagarh

Nazira

Borhat

Borhat

Safrai
**P. abietinus** Dick ex. Fr. On timber of *Quercus ruber* (L.)

**P. circinnatus** Fr. On dead wood of *Cinnamomeum tamala* (Nees), *Lagerstroemia speciosa* (Pers).

**P. friabilis** Bose On dead bamboo

**P. hispidus** (Bull. ex. Fr.) Averrhoa carambola (Linn)

*cordia myxa* (Linn) *Spondias mangifera* (Willd) *Areca catechu* (Linn) *Ficus religiosa* (Linn) *Bambusa vulgaris* (Schral) *Emblica officinalis* (Gaertn) *psidium guyava* (Linn) *prunus communis* (Hudson) *Mesua ferrea* (Linn) *Dillenia indica* (Linn) *Erythrina indica* (Lamk) *Nephelium litchi* (Camb) *Dalbergia sisso* (Roxb)

**P. lineatus** overh On dead logs of

*Delonix regia* (Raf) *Shorea robusta* (Gaertn) *Stereospermum chelonoides* (clarke) *Terminalia Arjuna* (Wt. & Arn)

**P. gilvus** schw On dead trunk & stump of *Boswellia serrata* (Roxb) *Bombax malabaricum* (D.C.) *Butea frondosa* (Roxb)

**P. perennis** (L. ex. Fr.) On stump of *Gmelina arborea* (Linn) *Terminalia chebula* (Retz)

**P. pubescens** Schew. On logs of *Delonix regia* (Raf) *Ficus religiosa* (Linn)

- Sibsagar
- Motherapur
- Changelibari
- Nazira, Simlugari.
- Chilonijan, Gomari.
- Golaghat
- Missamari, Golaghat, Sibsagar.
Lagerstroemia flos-reginae (Retz), Mesua ferrea (Linn)
Tamarindus indica (Linn.),
Terminalia arjuna (W&A).

**Polyporus sp.**
On dead branch of tree Akhoifutia

**Plate V** Fig. 23

**P. resinosus** (Schrad) On dead trunk of Samánia saman Meleng
(Merr), Terminalia arjuna (W&A),
T. mycriocarpa (Heurok & Muck)

**P. scrobiculatus** overh On decayed wood of Delbergia Charaideo,
sissoo (Roxb.), Mangifera indica Sapekhati.
(Linn).

**P. squamosus**
(Màcheli ex. Fr.)
On dead logs of cassia fistula Mothuraipur
(Minn), Dillenia indica (Linn),
Pterospermum acerifolium (Willd)

**P. sulphureus** (Bull ex. Fr.)
On stump of Gmelina arborea Golaghat
(Linn), Samánia saman (Merr)
Tengakhat

**P. tomentosus** Fries On dead wood Nahoroni

**P. sylvestris**
On dead buried root Thowra.

**P. perplexus** PK On dead wood and timber Nitaipukhuri

**P. umbellatus** Fr.
On stumps and trunks of Alstonia scholaris (R. Br.) Bokakhat,
Cassia fistula (Linn).
Emblica officinalis (Gaertn)
Dergaon

**P. picipes** Fr.
On decayed logs of Sapekhati,
Alstonia scholaris (R. Br.),
Mangifera indica (Linn)
Safrai
Polystictus

**P. sanguineus** Linn.
Plate VI Fig. 25
On dead trunks, stumps & logs of Areca catechu (Linn) Accacia catechu (Willd) Albizzia lucida (Linn) Albizza Prosera (Benth) Attocarpus integrifolia (Linn) Baccaurea sapida (Mull. Arg) Bambusa balooca (Willd) B. vulgaris (Schrad) cassia fistula (Linn) Cedrella toona (Roxb.) Cocos nuciferae (Linn) Dillenia indica (Linn) Eugenia jambolana (Lamk) Ficus bengalensis (Linn) F. benjamin (Linn) Lagerstroemia floresreginae (Retz) Mesua ferrea (Linn) Mangifera indica (Linn) Nephelium litchi (Camb) Phoenix sylvestris (Roxb) Psidium guayava (Linn) Salmalia malabarica (Schott) Shorea robusta (Gaertn) Tamarindus indica (Linn) T. chebula (Retz)

**P. villosus**
On dead branch of Michelia champaca (Linn) Tetramales nudiflorae (R. Br.)

Golaghat

**P. versicolor** Fr.
Plate VII Fig. 27
On Albizzia lucida (Linn) Areca catechu (Linn) Dalbergia sisso (Roxb.) Shorea robusta (Gaertn)

Rajmai, Thowra
**P. xanthopus**  
Plate V Fig. 24  
On dead logs, branch and sticks of Dillenia indica (Linn), Olea europea (Linn), Lagerstroemia speciosa (Pers), Albizia lucida (Linn), Dalbergia sisso (Roxb), Eugenia jambulana (Lamk), Pterospermum acerifolium (Willd), Mangifera indica (Linn), Mesua ferrea (Linn), Psidium guyava (Linn).

Very common in forest reserves and in small wood of the district.

Polystictus sp.  
Growing on ground and also attached to the buried wood.

Poria  
**P. diversipora** (Berk & Broome)  
On dead branch & timber of Albizia lucida (Linn), Albizia procera (Benth), Bambusa tulda (Willd), Dalbergia sisso (Roxb. ex. Dc.), Mangifera indica (Linn), Tectona grandis (Linn).

Galeki & Towka.

**P. hypobrunnea** petch.  
On Thea sinensis (Linn)  
Jorhat

**P. hypolaterita** (Berk) Cooke.  
On Thea Sinensis (Linn), Ficus benjamina (Linn).  
Cinnamora & Disoi.

**P. monticola**  
On dead branch and twigs of Cordia myxa (Linn), Dalbergia sisso (Roxb. ex. Dc.), Eugenia jambulana (Lamk), Gmelina arborea (Linn).

Kharahat, Gomari and Merapani.

**P. subrufa**  
Ellis & Dearn  
On dead unidentified wood  
Garampani

**P. nigra** (Berk) Cooke  
On dead trunks, stumps & branches of angiospermic plants.  
Rudrasagar, Salaguri.
Trametes Fries

*T. corrugata* (Persin Gaudich Bress.)

On dead logs and branch of *Cordia myxa* (Linn),

Erythrina indica (Linn),

Ficus bengalensis (Linn),

Ficus benjamina (Linn),

Mangifera indica (Linn),

Samania saman (Merr),

Spondius mangifera (Willd)

Betbari, Borholla, Charaibahi and Dhaialli

Plate IV Fig. 22

*T. flaccossus* Bres.

On bark and trunk of *Aegle marmelos* (Corr), *Ficus religiosa* (Linn), *Saraca indica* (Linn).

Dhansiri and Panidihing

*T. hispidus* Bagl.

On dead wood of *Emblica officinalis* (Gaertn),

Lagerstroemia flos reginae (Retz).

Harucharai and Missamari

Hydnaceae

*Hydnum* Linn

*H. coralloids* (Scop.)

Dalbergia sissoo (Roxb),

Dipterocarpus mannii (King)

Golaghat and Titabar

*H. imbricatum* (Linn)

Tetramales nudiflorae (R. Br)

Gomari

*H. pulcherimum* (B&C)

Tetramales nudiflorae (R. Br)

Joysagar

*H. septentrionale* Fr.

On dead wood of *Dalbergia sissoo* (Roxb. ex. Dc.),

Delonix regia (Raf.),

Mangifera indica (Linn)

Gaurisagar and Mechagarh

*Irpex*

*I. destruens* (Pötsch.)

On *Enterolobium saman* (Prain), *Shorea robusta* (Gaertn), *Thea sinensis* (Linn).

Amguri and Jorhat
I. flavus Klotzsch.  
Plate III Fig. 18b  
On decayed logs and stumps of Albizia lucida (Linn.), Areca catechu (Linn.), Eugenia jambulana (Lamk.), Mangifera indica (Linn.), Poinciana regia (Boj.) etc.  

I. mollis  
On dead trunk  

I. subvinosus Berk  
On dead Enterolobium saman (Prain.)  

Clavariaceae  
Pterula Fr.  
P. subulata  
On dead branches and twigs of trees.  

Pterula sp.  
On dead root and twigs  

Ramaria S.F.Gray emend. Donk.  

R. flaccida (Fr.) Ricken  
On rotting stumps and logs of forest trees and dead twigs.  

R. moellariana (Bres et Roum.) Corner  
On dead and decayed wood  

Typhula Fr. emend. Kärst.  
T. erythropus Fr.  
On dead sticks  

Thelephoraceae  
Exobasidium  
E. vexans  
On living twigs and leaves of Thea sinensis (Linn.)  

Corticium Fr.  
C. dealbans (Tunställ)  
On bark of tea  

C. repens (Berk.)  
On Thea sinensis (Linn.)  

C. salmonicolor (R&Br)  
On Thea sinensis (Linn.)  

Dhaiali, Moran and Mathurapur  
Boliaghata  
Chinnamora  
Sibsagar  
Akhoifutia, Kordoiguri.  

On rotting stumps and logs of forest trees.  
Borhat and Dekhari.  
Kachmari F.V.  
Hatikokh  
Jorhat and Towka  
Rajmai and Thowra  
Sepon  
Jorhat
C. thea (Bernard)  
**Hymenochaete**  
Hymenochaete sp.  
H. rubiginosa (Schr). Lev.  

Cyphella  
C. capula  

Stereum Fr.  
S. fuscom (Schrad) Quel  
S. Gaussapatum  
S. lobatum Fr.  
S. hirsutum (Willd.) Fr.  
S. umbrinum (B&C)  

Thelephora Fr.  
T. palmata (Scop.) Fr.  

Tremellinaceae  
Auricularia  
A. mesenterica Mont.  

---

On Thea sinensis (Linn.)  
On dead wood  
On gate posts and on dead branches  
On dead branch of Gmelina arborea (Linn.), Tetramales nudiflorae (R. Br.)  
On dead stump of Dalbergia sissoo (Roxb)  
On logs of Lagerstroemia flos reginae (Retz.)  
Growing on dead stump of Albizia procera (Benth.), Vatica lancifolia (Bl.)  
On dead logs of Cedrela toona (Roxb) and Shorea robusta (Gaertn).  
Growing on dead Artocarpus chaplasha (Roxb.), Sterculia alata (Roxb.)  
On stump of Bambusa arundinacea (Willd.), Mesua ferrea (Linn.)  
On dead logs of Bombax malabaricum (Dc.)  
Erythrina variegata (Linn.), Ficus religiosa (Linn.)  

Jorhat  
Mothurapur  
Mechagarh and Naginimora  
Doyang F.V. and Golaghan  
Galeki  
Moran  
Teok  
Kakajjan  
Charaideo  
Golaghan  
Amguri and Demow  
Dhaiali and Titabar
Auricularia auricula Judae (Berk.)
Plate VI Fig. 26a
Plate VII Fig. 29a

Exidia
E. glandulosa Fr.

Tremella Fr.
T. albida Hud.
T. lutescens Fr.
T. mesenterica Retz.
T. sparassoidea
Plate VI Fig. 26b

Tremellodon pers.
T. gelationosum (Scop.)
Pers.
Plate VI Fig. 26b

Guepinia Fr.
G. peziza Tul.
G. spathularia Schw.

On dead branch of Artocarpus chaplasha (Roxb.), A. heterophylla (Lamk.), Bambusa arundinacea (Willd.), B. tulda (Roxb.), Dillenia indica (Linn), Poinciana regia (Boj.), Terminalia arjuna (W&A) and also on some living trees

On old unidentified trunk
On dead trunk of Artocarpus chaplasha (Roxb.), Dillenia indica (Linn).
On Burserra serrata (Calchbr)
On dead Prunus persica
On dead branch of Ficus bengalensis (Linn), F. religiosa (Linn), Premna bangalensis, Terminalia arjuna (W&A)
On base of bamboo stump attached with soil
On dead logs of Syzigium (Jamboos) (Alston)
On dead logs, stumps and wood of Areca catechu (Linn), B. tulda (Roxb.), Bauhinia purpurea (Linn), Bauhinia variegata (Linn), Mesua ferrea (Linn), Phoenix sylvestris (Roxb.), Shorea robusta (Gaertn)

In almost all places of the district.
Mechagarh
Sibsagar
Dhaiali, Konwarpur
Nemunagarh
Morioni and Naphuk

Akhoifutia and Dhaiali
Cherekapar, Hahchara
Sibsagar, Jorhat and Golaghat
Calocera Fr.

C. cornea Fr. On decayed stump of Bambusa arundinacea (Willd.), Gmelina arborea (Linn)

C. viscosa. On unidentified wood

Helicobasidium

H. compactum (Boedijn) On Thea sinensis (Linn)

Basidiomycete

Gasteromycetes

Nidulariaceae

Cyathus Pers.

C. striatus Hoffm. On dead twigs and branches of Areca catechu (Linn), Bambusa vulgaris (Schrad.), Eugenia jambulana (Lamk)

Crucibulum Tul

C. vulgare (Tul). On dead wood and sticks of Albizzia lucida (Linn), Areca catechu (Linn), Psidium guyava (Linn)

Nidularia Tul

N. pisiformis Tul On dead stumps and branches of Bambusa vulgaris (Schrad.), Cocos nuciferae (Linn), Mangifera indica (Linn.)

Lycoperdaceae

Lycoperdon Tourn

L. caelatum Bull On decayed timber Chamuguri

L. gemmatum Batsch On dead and decayed wood

L. pyriforme Schaeff. On dead and decayed unidentified logs of wood Kakadongga, Letekujan and Senchua

Almost all places of the district
Table 7.1 showed the occurrence of different species of Basidiomycetes growing on wood and the total number of genera and species found are given below (Table 7.2):

<table>
<thead>
<tr>
<th>Families</th>
<th>Nos. of genera</th>
<th>Nos. of species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agaricaceae</td>
<td>19</td>
<td>62</td>
</tr>
<tr>
<td>Polyporaceae</td>
<td>12</td>
<td>75</td>
</tr>
<tr>
<td>Hydnaceae</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Clavariaceae</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Thelephoraceae</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>Tremellinaceae</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Nidulariaceae</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Lycoperdaceae</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>53</strong></td>
<td><strong>183</strong></td>
</tr>
</tbody>
</table>
EXPLANATION OF PLATES

Plate I
Fig. 13 : *S. crispa*
Fig. 14 : *C. adirondackensis*
Fig. 15 : *P. disseminata*, showing the caestipose habit around a post.

Plate II
Fig. 16 : *Pleurotus* Sp., showing gill surface.
Fig. 17 : *L. strigosus*, typical sporophore.

Plate III
Fig. 18a : *S. commune*, group of imbricated plants.
18b : *I. flavus*, showing its habit.
Fig. 19 : *G. lucidum*, upper and lower surface view of stipitate sporophores

Plate IV
Fig. 20 : *Lenzite* Sp.
Fig. 21 : *P. brumalis*, typical sporophores.
Fig. 22 : *I. corrugata*, showing both poroid and abhymenial surface of the sporophore.

Plate V
Fig. 23 : *Polyporus* Sp., usual effused-reflexed form, and upper surface view.
Fig. 24 : *P. xanthopus*, both upper and lower surface view on a dead fallen branch.

Plate VI
Fig. 25a : *P. sanguineus*, upper and lower surface view of typical sporophores.
Fig. 25b : *P. hirsutus*, on *M. ferrea*.
Fig. 26a : *A. auricula judae*.
26b : *T. gelatinosum*.
26c : *T. sporassoidea*.

Plate VII
Fig. 27 : *P. versicolor*, densely imbricated sporophores.
Fig. 28 : *P. borealis*, typical sessile sporophore.
Fig. 29a : *A. auricula judae*, pendulous sporophores.
29b : *C. adirondackensis*. 
During decay of the wood several physical, chemical and mechanical changes take place affecting the properties of wood.

Colour which is one of the important physical changes may develop in wood due to growth of the fungi and may vary according to nature of host tissues. In some cases various colour developments may found in the wood decay during the incipient stage, may not be from the activities of the wood rotting fungi, but which are developed from some other sources (Boyce, 1923a, Anonymous, 1943; Schaeffer, 1944; Hansbrough and Englerth, 1944; Englerth and Hansbrough, 1945).

Zonation, such as black or brown zone lines are noted in most of the wood decay caused by fungi. The zone lines are formed by the brown pigmented fungal hyphae which are produced only when the fungal mycelia are kept exposed to the air accompanied by high percentage of water (Boyce, 1948).

Another important aspect of decay of wood concerns moisture content of the wood and of the atmosphere. The completely dry wood cannot deteriorate; as there has to be 20% of moisture in wood before rot can begin, 27-33% or more is needed for the subsequent decay. The influence of moisture on fungal deterioration of economically important materials has been studied intensively and reviewed often (Bavendum and Reichhelt, 1938; Lindgren, 1942; Siu, 1951; Snow, Crichton and Wright, 1944).
In the present investigation the appearance of colour, zone lines in some cases and amount of moisture content were studied of decaying wood where fungi grew and recorded in Table 7.3 and 7.4 respectively. The histological effects of decaying wood due to fungal growth was also studied.

**Table 7.3**

<table>
<thead>
<tr>
<th>Name of fungi</th>
<th>Nature of colour and zone lines</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>A. mellea</em></td>
<td>Fibrous stringy pale colour usually with dark zone lines.</td>
</tr>
<tr>
<td><em>C. velutipes</em></td>
<td>Soft spongy white sap rot.</td>
</tr>
<tr>
<td><em>D. ambigua</em></td>
<td>Whitish in colour and wood becomes soft.</td>
</tr>
<tr>
<td><em>D. confraqosa</em></td>
<td>White delignifying decay.</td>
</tr>
<tr>
<td><em>D. flavida</em></td>
<td>White spongy rot.</td>
</tr>
<tr>
<td><em>D. quercina</em></td>
<td>Brown cubical, thin mycelial sheets in cracks.</td>
</tr>
<tr>
<td><em>F. alveolaris</em></td>
<td>White delignifying decay.</td>
</tr>
<tr>
<td><em>F. applanatus</em></td>
<td>Staw coloured or white mottled delignifying decay.</td>
</tr>
<tr>
<td><em>E. conchatus</em></td>
<td>Light yellowish or yellow in colour.</td>
</tr>
<tr>
<td><em>F. fomentarius</em></td>
<td>Whitish or straw coloured.</td>
</tr>
<tr>
<td><em>F. igniarius</em></td>
<td>Soft spongy whitened mass in interior part and decayed area was bounded by conspicuous dark zone or black lines.</td>
</tr>
<tr>
<td><em>F. lignosus</em></td>
<td>Brown cubical rot.</td>
</tr>
<tr>
<td><em>F. lividus</em></td>
<td>White spongy rot.</td>
</tr>
<tr>
<td><em>F. pectinatus</em></td>
<td>White stringy rot.</td>
</tr>
<tr>
<td><em>F. rimosus</em></td>
<td>Spongy yellow heart rot.</td>
</tr>
<tr>
<td><em>F. senex</em></td>
<td>White sap and heart rot.</td>
</tr>
<tr>
<td><em>G. lucidum</em></td>
<td>White sap and heart rot.</td>
</tr>
</tbody>
</table>
Table 7.3 (contd.)

<table>
<thead>
<tr>
<th>Name of fungi</th>
<th>Nature of colour and zone lines</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>H. discopoda</em></td>
<td>White spongy sap rot</td>
</tr>
<tr>
<td><em>H. rubiginosa</em></td>
<td>White pocket rot.</td>
</tr>
<tr>
<td><em>I. flavus</em></td>
<td>White stringy or white rot.</td>
</tr>
<tr>
<td><em>L. praerigida</em></td>
<td>White spongy fibrous rot.</td>
</tr>
<tr>
<td><em>Lenzite sp.</em></td>
<td>Brown cubical.</td>
</tr>
<tr>
<td><em>L. adusta</em></td>
<td>White spongy rot.</td>
</tr>
<tr>
<td><em>L. betulina</em></td>
<td>White spongy sap rot.</td>
</tr>
<tr>
<td><em>L. saepieria</em></td>
<td>Brown, cubical, checked carbonizing decay.</td>
</tr>
<tr>
<td><em>P. ostreatus</em></td>
<td>White spongy sap rot.</td>
</tr>
<tr>
<td><em>P. adustus</em></td>
<td>White spongy rot, with black zone lines.</td>
</tr>
<tr>
<td><em>P. histidus</em></td>
<td>Pale yellowish brown colour or straw coloured.</td>
</tr>
<tr>
<td><em>P. gilvus</em></td>
<td>White pocket rot.</td>
</tr>
<tr>
<td><em>P. lineatus</em></td>
<td>Brown carbonizing type.</td>
</tr>
<tr>
<td><em>P. radiatus</em></td>
<td>White in early stage, rusty yellow in advanced stages</td>
</tr>
<tr>
<td><em>P. versicolor</em></td>
<td>White fibrous rot with light brown zone lines.</td>
</tr>
<tr>
<td><em>P. xanthopus</em></td>
<td>White spongy rot.</td>
</tr>
<tr>
<td><em>S. commune</em></td>
<td>Slight pale mottling never causes advanced stages of rot.</td>
</tr>
<tr>
<td><em>S. hirsutum</em></td>
<td>White soft stringy rot sometimes in pipe.</td>
</tr>
<tr>
<td><em>S. lobatum</em></td>
<td>White spongy rot.</td>
</tr>
<tr>
<td><em>T. corrugata</em></td>
<td>Light gray or soft spongy.</td>
</tr>
<tr>
<td><em>T. mollis</em></td>
<td>White fibrous rot with black zone lines.</td>
</tr>
<tr>
<td><em>T. sparassoidea</em></td>
<td>Light pale yellow in colour.</td>
</tr>
</tbody>
</table>
Thus different rots with different colouration developed on host timber, due to the growth of different types of fungi.

Table 7.4
Moisture content of fungi growing on decayed wood

<table>
<thead>
<tr>
<th>Name of fungi</th>
<th>Name of host</th>
<th>Percentage of moisture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auricularia-auricula-judae</td>
<td>Areca catechu</td>
<td>33.96%</td>
</tr>
<tr>
<td>&quot;</td>
<td>Artocarpus chaplasha</td>
<td>30.80%</td>
</tr>
<tr>
<td>Clitocybe cyathiformis</td>
<td>A. heterophylla</td>
<td>40.45%</td>
</tr>
<tr>
<td>C. flaccida</td>
<td>Mesua ferrea</td>
<td>58.66%</td>
</tr>
<tr>
<td>Coprinus micaceous</td>
<td>Areca catechu</td>
<td>71.6%</td>
</tr>
<tr>
<td>Psathyrella disseminata</td>
<td>Cocos nucifera</td>
<td>70.31%</td>
</tr>
<tr>
<td>Collybia velutipes</td>
<td>Dillenia indica</td>
<td>52.04%</td>
</tr>
<tr>
<td>Crepidotus versutus</td>
<td>Ficus religiosa</td>
<td>70.04%</td>
</tr>
<tr>
<td>Guepinia spathularia</td>
<td>Bambusa arundinacea</td>
<td>36.08%</td>
</tr>
<tr>
<td>&quot;</td>
<td>Unidentified sp</td>
<td>29.3-62.04%</td>
</tr>
<tr>
<td>Hydnum imbricatum</td>
<td>Tetrameles nudiflorae</td>
<td>38.70%</td>
</tr>
<tr>
<td>H. septentrionale</td>
<td>Mangifera indica</td>
<td>52.3%</td>
</tr>
<tr>
<td>Irpex flavus</td>
<td>Albizzialucida</td>
<td>32.03%</td>
</tr>
<tr>
<td>L. destruens</td>
<td>Enterolobium</td>
<td>44.24%</td>
</tr>
<tr>
<td>Lenzites sp.</td>
<td>Mesua ferrea</td>
<td>42.4%</td>
</tr>
<tr>
<td>L. adusta</td>
<td>Shorea eobusta</td>
<td>32.2%</td>
</tr>
<tr>
<td>Marasmius candidus</td>
<td>Cocos nucifera</td>
<td>77.6%</td>
</tr>
<tr>
<td>M. dichrous</td>
<td>Bambusa tulda</td>
<td>48.3%</td>
</tr>
<tr>
<td>M. foetidus</td>
<td>Areca catechu</td>
<td>46.48%</td>
</tr>
<tr>
<td>Nidularia pisiformis</td>
<td>Lagerstroemia-flos-reginae</td>
<td>58.03%</td>
</tr>
<tr>
<td>&quot;</td>
<td>Bambusa arundinacea</td>
<td>22.42%</td>
</tr>
<tr>
<td>Omphalia campanella</td>
<td>Bambusa tulda</td>
<td>40.20%</td>
</tr>
<tr>
<td>Pleurotus ostreatus</td>
<td>Terminalia myriacarpa</td>
<td>59.96%</td>
</tr>
<tr>
<td>&quot;</td>
<td>Bombax malabaricum</td>
<td>70.07%</td>
</tr>
<tr>
<td>&quot;</td>
<td>Ficus benjamina</td>
<td>62.30%</td>
</tr>
</tbody>
</table>
The Table 7.4 reveals that Marasmius candidus grew in highest moisture content i.e. 77.6% in dead and decayed Cocos nuciferae logs and one of the Polyporus sp. showed lowest i.e. 20.32% moisture in Bambusa tulda. The rotting varied according to the nature of wood. Psathyrella and Coprinus did not have the capacity to cause rapid rot but grew in wood with high moisture content. Some fungi such as Polyporus, Polystictus, Irpex, Hydnum, Schizophyllum etc. grew in wood both in high and low moisture content.

The growth of fungi in the district was abundant which might be attributed due to the favourable moisture content and climatic condition and availability of dead and decayed timber. The abundant growth on the other hand causes wood rot incurring heavy economic loss.
HISTOLOGICAL STUDIES

The distribution of hyphae in the wood resulting in disintegration was studied by histological methods. The distribution of the mycelium in the decayed wood is reported in both irregular and uniform manner. In the early stages of decay, the hyphae are often scanty but later become plentiful and are distributed throughout the different cells of the wood. At first the hyphae develop mainly in medullary rays and to a certain extent within the vessels but in the wood fibres are comparatively less numerous. The hyphae often fill the entire cavities of the cells forming wefts and are of two kinds, firstly rather fine, profusely branched and hyaline with a few clamp connections, and secondly a coarser hyaline hyphae, sparingly branched with conspicuous granular contents. The fine hyphae appear to be more numerous in medullary ray cells and wood fibres and probably are the first to invade the uninfected parts. The hyphae first ramify and pass from cell to cell through the simple pits of the wood elements but later they directly penetrate the cell wall, the finer hyphae show little or no diminution in their width but the wider hyphae at first are very much attenuated like a peg during the process of penetration. The bore holes are formed in advance by enzymatic action at the point of contact of the hyphae and during the process of penetration. They are visible within the wider bore holes through which they passively pass. Bore holes, though first wider than the penetrating hyphae are merely fine passages which at length enlarge in diameter. In case of wider
hyphae, its attenuated apex after penetration of the wall begins to widen, until it gets the normal diameter, while a portion of the hyphae remaining within the bore hole appears exceedingly fine. Bore holes in advance stages of decay become more numerous and often coalesce to form irregular holes. At first they appear round or oval in form. Their inner contours are smooth and ruptured. This shows that they have originated due to the dissolution by a chemical solvent reacting from a central point. This type of chemical dissolution of the cell wall by enzymic activity of the fungus supports Proctor's (1941) theory of cell wall penetration.

The microphotographs of the infection of different types of wood elements of different decayed timbers and common trees affected by various basidiomycetous fungi revealed the following features:

**Clitocybe infundibuliformis**: Unidentified host. Branched, light brown coloured, thick and thin walled hyphae were found to be distributed mainly in vessels but distributed also in tracheidal cells and wood fibres. Knobs common in hyphae. The hyphae passed from cell to cell through wall forming some bore holes (Plate VIII, Fig. 30).

**Schizophyllum commune**: *Acacia catechu*: Dark coloured, thick walled branched hyphae with some swellings present both in vessels and tracheids. In the section, presence of clamp connection was also observed. Hyphae penetrating through the wall holes from one cell to other. Hyphae filling in the cavities of the vessels with
decomposition products that the heavily encrusted hyphae were practically obscured (Plate VIII, Fig. 31a, b).

**Panus stypticus**: Unidentified host. Longitudinal section of the host showed following types of distribution of the hyphae in different cells.

Both thick and thin walled, branched hyphae with some knobs were found to occur intracellularly in vessels, tracheids and ray cells and also abundant bore holes. Cell contents disintegrated (Plate VIII, Fig. 32).

**Fomes igniarius**: *Bischoffia javanica*.

**Fomes fomentarius**: Unidentified host.

**Fomes marmoratus**: Unidentified host.

Intercellular hyphae commonly occurred in cavities of vessel and in tracheids, hyphae passing from cell to cell through the holes of the cell wall and in later cases both thick and thin walled hyphae finally form granulated structures which were distributed in vessels and tracheids (Plate VIII, Fig. 33 & 34; Plate IX, Fig. 35a, b).

**Daedelia ambigu** : *Gmelina arborea*. Branched, septate, dark, thick walled hyphae mainly in vessels and also in tracheids and medullary rays. Clamp connections and swellings of hyphae were also noted. (Plate IX, Fig. 36a, b).

**Trametes corrugata**: *Cordia myxa*. Distribution of hyphae in vessels, tracheidal cells and ray parenchyma cells were noted. Bore holes and swellings were also found to be present. Cell wall contents disintegrated (Plate IX, Fig. 37).
Irpex flavus: Albizzia lucida. Thin and thick walled, light and dark coloured hyphae distributed intracellularly in vessels and tracheids. Presence of bore holes, swellings and clamp connections were also observed (Plate IX, Fig. 38).

Hydnum sp.: Pterospermum acerifolium. Thin walled hyphae densely concentrated in vessels and tracheids. Thick walled hyphae were also noted. Intracellular. Hyphae in the cells finally converted into some granular mass, where heavily encrusted hyphae were practically obscured (Plate X, Fig. 39).

Poria monticola: Bambusa vulgaris. Hyphae intracellular, distributed in tracheids and vessels. Thick and thin walled, fine, fibrous also in some cases. Bore holes, knobs and clamp connections were also noted in different cells. Cell walls broken and cell contents disintegrated (Plate X, Fig. 40).

Ganoderma lucidum: Mitrephora tomentosa. Thick walled, septate, distinct hyphae with swellings were very much abundant in vessels and tracheids. Intracellular. Hyphae passed from cell to cell through wall holes (Plate X, Fig. 41).

Polystictus xanthopus: Eugenia jambulana.

Polystictus sanquinus: Nephelium litchi. Thin and thick walled, branched hyphae distributed intracellularly in vessels, tracheids and ray parenchyma cells. Presence of bore holes were also noticed. Hyphae formed a dense mass, some showed granular structure, cell contents partly disintegrated (Plate X, Fig. 42a, b).
Polyporus hispidus: *Dillenia indica, Mangifera indica.*

Polyporus sp.: Unidentified host. Dark coloured, light brown, septate, thick and thin walled hyphae with some swellings and clamp connections distributed in tracheids, vessels, medullary rays, wood fibres and other cells. Cell contents disintegrated, cell wall broken. The hyphae at first, found to ramify and pass from cell to cell through the simple pits of the wood elements but later they directly penetrated the cell walls forming numerous bore holes. Some hyphae were densely concentrated, coalescing to form dark mass and some were sparsely distributed. In some cases presence of tyloses found to prevent its remification (Plate XI, Fig. 44, 45, 46, 47a, b).

Cyathus striatus: Unidentified host. Branched, thick walled hyphae passed through the pits and bore holes, intracellular, disintegration of cell contents took place showing the broken cell wall. Hyphae distributed in vessels and tracheidal cells (Plate XI, Fig. 48).

Singh (1969) studied the effect of *Irpex destruens* on *Shorea robusta* and found that the fungal hyphae were often seen running in the cavities of the cells following in general way, the long axis of the cell. In most cases, hyphae were adpressed closely to the cell wall, and often they pass from cell to cell directly through the cell wall or sometimes through the pit membranes. All the hyphae were septate. Clamp connections and swellings of hyphae were also noted.
EXPLANATION OF PLATES AND FIGURES

**Plate VIII**

Fig. 30: Photomicrograph of decayed log of wood, showing the distribution of thickwalled hyphae in xylem cavities.

Fig. 31a,b: Photomicrographs of both transverse and longitudinal sections of infected stem showing presence of fungal hyphae in different cells, particularly in vessel and their entrance from cell to cell through holes.

Fig. 32: Photomicrograph of longitudinal section of wood showing distribution of hyphae of *Panus stypticus* in different cells.

Fig. 33-34: Photomicrographs of transverse sections of dead wood of *B.javanica* and an unidentified host showing the presence of mycelium in xylem cavity and their ramification.

**Plate IX**

Fig. 35a,b: Photomicrographs showing both thick and thin walled hyphae with some swellings in xylem vessels.

Fig. 36a,b: Photomicrographs of transverse and longitudinal section of dead *G.arborea* stem indicating the presence of hyphae of *D.ambiqa* in xylem cavities and other cells.

Fig. 37: Photomicrograph of longitudinal section of dead branch of *C.myxa* showing the distribution of thick walled hyphae of *I.corrugata* with some swellings and their ramifications.

Fig. 38: Photomicrograph of transverse section of dead branch of *A.lucida* showing the distribution of hyphae of *I.flavus* in the xylem cavities.
Plate X

Fig. 39: Photomicrograph showing the presence of mycelium of *Hydnum* sp. converting somewhat granular mass in the xylem cavities of infected stem.

Fig. 40: Photomicrograph showing the distribution of hyphae of *P.monticola* within the vessels and also the presence of clamp-connections.

Fig. 41: Photomicrographs of transverse section of *M.tomentosa* giving the indications of presence of thick walled hyphae with some knobs formed in the vessels.

Fig. 42a,b: Photomicrographs showing the distributions of hyphae of *P.xanthopus* in fine somewhat in granular form.

Fig. 43: Photomicrographs showing presence of hyphae of *P.sanquinus* in different cells of infected wood.

Plate XI

Fig. 44,45: Photomicrographs indicating the presence of thin and thick walled hyphae of *Polyporus* sp. within vessels and other cells of the infected dead stems.

Fig. 46: Photomicrograph showing the presence of thin and fine hyphae of *Polyporus* sp. in xylem cavities.

Fig. 47a,b: Photomicrographs of longitudinal and transverse sections of the dead stem showing the presence of hyphae with some swellings in the infected wood of *M.indica*.

Fig. 48: Photomicrograph of longitudinal section of the host showing the presence of thin and thick walled hyphae with some swellings in vessels and other cells.
During the process of active fungal attack, host cell walls were disintegrated thereby reducing the host timber to useless material. Enzymatic reactions particularly pectinases and cellulases are associated with the disintegration of the tissues. Another feature the fixation of atmospheric nitrogen — by *Irpex destruens* causing rot of *Shorea robusta* wood from atmosphere was observed by Singh and Baruah (1967) as shown below (Table 7.5) and found the higher nitrogen content in the infected host tissues than the healthy host tissues.

<table>
<thead>
<tr>
<th>Samples (500 mg)</th>
<th>Nitrogen content in mg.</th>
<th>Percentage of Nitrogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fungal fructification</td>
<td>2.0384</td>
<td>0.4076</td>
</tr>
<tr>
<td>Infected host tissues</td>
<td>1.0976</td>
<td>0.2195</td>
</tr>
<tr>
<td>Dead healthy host tissues</td>
<td>0.0784</td>
<td>0.0156</td>
</tr>
</tbody>
</table>

Source: Singh and Baruah (1967-68).
DYNAMICS OF SAPROPHYTISM

Fungi occurring on soil as well as on timber or on timber or on soil alone as saprophytes were recorded in one case and in another case records were also made regarding the timber inhabiting fungi growing both saprophytically and parasitically as follows:

Table 7.6
Fungi occurring on soil as well as on wood and saprophytically as well as parasitically

<table>
<thead>
<tr>
<th>Soil cum wood inhabiting fungi</th>
<th>Saprophytic cum parasitic fungi</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. mellea</td>
<td>A. mellea</td>
</tr>
<tr>
<td>C. cyathiformis</td>
<td>D. ambigua</td>
</tr>
<tr>
<td>C. infundibuliformis</td>
<td>D. confragosa</td>
</tr>
<tr>
<td>C. multiceps</td>
<td>D. quercina</td>
</tr>
<tr>
<td>C. acervata</td>
<td>F. applanatus</td>
</tr>
<tr>
<td>C. dryophila</td>
<td>F. conchatus</td>
</tr>
<tr>
<td>Cantharellus</td>
<td>F. fomentarius</td>
</tr>
<tr>
<td>infundibuliformis</td>
<td>F. fraxinophilous</td>
</tr>
<tr>
<td>C. atramentarius</td>
<td>F. igniarius</td>
</tr>
<tr>
<td>C. comatus</td>
<td>F. rimosus</td>
</tr>
<tr>
<td>C. micaceous</td>
<td>F. pectinatus</td>
</tr>
<tr>
<td>L. americana</td>
<td>F. lamaeensis</td>
</tr>
<tr>
<td>H. appendiculatum</td>
<td>F. marmoratus</td>
</tr>
<tr>
<td>U. umbelliferae</td>
<td>F. senex</td>
</tr>
<tr>
<td>L. gemmatum</td>
<td>F. hepatica</td>
</tr>
<tr>
<td>L. pyriforme</td>
<td>G. lucidum</td>
</tr>
<tr>
<td>P. disseminata</td>
<td>A. auricula judae</td>
</tr>
<tr>
<td>P. involutus</td>
<td>P. adiposa</td>
</tr>
<tr>
<td>Polyergus sp.</td>
<td>S. commune</td>
</tr>
<tr>
<td>P. adustus</td>
<td>M. lacrymens</td>
</tr>
<tr>
<td>P. friabilis</td>
<td>P. hispidus</td>
</tr>
</tbody>
</table>
Altogether 28 species were found as soil cum wood inhabiting fungi and 26 species were found as saprophytic cum parasitic fungi (Table 7.6).

It was found that though certain basidiomycetous fungi grew in substrates specifically, yet some fungi could pass from one substrate to another. Garrett (1956), Rao (1959), Wastie (1961) noted that a highly specialised pathogen sometimes shows a low degree of saprophytic ability. *Armillaria mellea* may rapidly grow and sporulate on wood substrates and also migrate to the surrounding soil. In the present study species of some of the fungi such as *Armillaria, Clitocybe, Collybia, Omphalia, Cantharellus, Coprinus, Lepiota, Hypholoma, Psathyrella* etc. were found to grow heavily on wood and showed tendency to grow in soil as well. Some of the species of *Polyporus* grew well in wood inspite of the contact with the soil and some of these behaved as vigorous saprophytic colonizer. Soil inhabiting fungi on the other hand were characterised by ability to survive indefinitely in soil as saprophyte and were different from a

<table>
<thead>
<tr>
<th>Soil cum wood inhabiting fungi</th>
<th>Saprophytic cum parasitic fungi</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>P. sylvestris</em></td>
<td><em>P. squamosus</em></td>
</tr>
<tr>
<td><em>P. umbellatus</em></td>
<td><em>P. sulphureus</em></td>
</tr>
<tr>
<td>Pterula sp.</td>
<td><em>P. sanguineus</em></td>
</tr>
<tr>
<td><em>R. flaccida</em></td>
<td><em>P. versicolor</em></td>
</tr>
<tr>
<td><em>R. moellariana</em></td>
<td><em>S. hirsutum</em></td>
</tr>
<tr>
<td><em>T. palmata</em></td>
<td></td>
</tr>
<tr>
<td><em>T. gelatinosum</em></td>
<td></td>
</tr>
<tr>
<td><em>N. pisiformis</em></td>
<td></td>
</tr>
</tbody>
</table>
large and important group of litter fungi which were dependent on specific organic substrate for optimum growth and survival. The litter inhabiting fungi gradually gave way to soil inhabiting fungi as the substrate was decomposed.

*Armillaria mellea* was found to derive its food from humus or other organic and inorganic constituents of the soil as saprophyte but it could parasitize trees also. Cartwright and Findley (1938) observed that, *A. mellea* possess physiologic races which differ in pathogenicity and where the weakly parasitic and saprophytic races exist, trees escape but where virulent races of the organisms are present, trees are attacked. Species of some of the fungi such as *Daedelia, Fomes, Polyporus, Armillaria, Pholiota, Schizophyllum, Ganoderma, Fistulina, Auricularia* and *Merulius* showed both saprophytic and parasitic behaviour. Banerjee and Mukherjee (1954) noted the parasitic behaviour of Saprophytic *Marasmius campanella* on *Lagerstroemia speciosa*, Smith (1930) reported the parasitic nature of *Trämetes hispidus* on living populus.

Thus, the growth of some types of fungi found to occur in different substrates showing their different behaviours.
FUNGAL SUCCESSION IN WOODY TISSUES

The occurrence of fungi in same wood or stump year after year with the change in number of different types of fungi was of interest to determine the influences of different factors on growth of the fungi in woody tissues. Replacement of one fungus by another in unprotected stumps was studied by Meredith (1960) in East Anglican plantations of Scots and Corsican pines. Stump surfaces exposed by tree felling were at first were infected by air borne spores either of *F. annosus* or of one or other of two common basidiomycetous competitors, *Peniophora gigantea* and *Stereum sanguinolentum*. These primary basidiomycete invaders were often found to have been replaced in 3 to 4 years old stumps by *Hypholoma fasciculare* (Hudson) Fr. and after 5 years *Tricholoma rutilans* had become the commonest basidiomycetous occupant of these stumps.

Risbeth (1950) observed that *F. annosus* is readily replaced in rotten wood by many other fungi such as *Trichoderma viride*, *Torula ligniperda* (Willkin) Sacc. which are again followed by *Hypholoma fasciculare*, *Melanospora* sp. and various "blue stain" fungi. Garrett (1963) in another case stated that succession of lignin decomposing higher basidiomycetes have started "from the wrong end". The *Phycomycetes* and those species of Fungi imperfecti that happen to be sugar fungi have been reduced in the succession in pine stumps from the role of primary sugar fungi to the secondary sugar fungi dependent upon the activity of cellulose and lignin-decomposers, in association with which they are growing.
Transeu (1949) in one of his experiments found that the same fungi can grow successively year after year in the same stump, with only the variation in numbers of pilei, due probably to the availability of perennial mycelium, available food supply, favourable moisture content and also climatic conditions.

The pattern obtaining in the case of succession of the woody fungi on wood after the establishment of the primary colonizers is noted as follows:

(A) One decayed stump of *Mangifera indica* had been selected where *Psathyrella disseminata* pilei were growing successively year after year. Monthly records were also made seasonally for four years (Table 7.7)

<table>
<thead>
<tr>
<th>Year</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug.</th>
<th>Sept.</th>
<th>Oct.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>22.5</td>
<td>18.3</td>
<td>24.0</td>
<td>29.6</td>
<td>37.6</td>
<td>24.48</td>
<td>23.37</td>
<td>25.4</td>
</tr>
<tr>
<td>1971</td>
<td>36.2</td>
<td>35.3</td>
<td>39.4</td>
<td>34.1</td>
<td>48.3</td>
<td>17.22</td>
<td>-</td>
<td>34.4</td>
</tr>
<tr>
<td>1972</td>
<td>26.9</td>
<td>27.6</td>
<td>22.2</td>
<td>36.2</td>
<td>-</td>
<td>33.20</td>
<td>40.22</td>
<td>25.8</td>
</tr>
<tr>
<td>1973</td>
<td>14.3</td>
<td>18.7</td>
<td>14.4</td>
<td>-</td>
<td>14.1</td>
<td>25.1</td>
<td>36.40</td>
<td>14.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>13.30</td>
<td>18.97</td>
<td>23.00</td>
<td>18.90</td>
<td>11.73</td>
<td>9.98</td>
<td>4.10</td>
<td></td>
</tr>
</tbody>
</table>

The results showed that:

The highest occurrence in 1971 was probably due to the mycelial penetration into most of the parts of the stump. In the succeeding years i.e. in the 3rd and 4th year the mycelium probably depended for its food entirely on the same stump from
which the supply of nutrients gradually decreasing and as a result of which the number of sporophores were decreasing.

(B) In the second case the succession of different fungi was observed in one decayed Mesua ferrea post that was lying for several years in a particular plot. The fungi were growing successively in the same post in different seasons are shown below in Table 7.8

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P. sanguineus</td>
<td>15.24</td>
<td>24.29</td>
<td>32.20</td>
<td>28.26</td>
</tr>
<tr>
<td>P. hispidus</td>
<td>19.08</td>
<td>24.42</td>
<td>29.00</td>
<td>27.50</td>
</tr>
<tr>
<td>Fomes sp.</td>
<td>19.27</td>
<td>24.09</td>
<td>30.13</td>
<td>26.50</td>
</tr>
<tr>
<td>T. corruqata</td>
<td>-</td>
<td>27.63</td>
<td>34.21</td>
<td>38.15</td>
</tr>
<tr>
<td>C. adirondackensis</td>
<td>-</td>
<td>32.18</td>
<td>36.78</td>
<td>31.03</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12.37</td>
<td>25.99</td>
<td>32.13</td>
<td>29.48</td>
</tr>
</tbody>
</table>

The results showed that

The highest occurrence of the number (in percentage) of fruit bodies was found in the 3rd year of the successive stages either species wise i.e. in case of P. sanguineus, P. hispidus, Fomes sp. and T. corruqata or in total.

(C) In the third case, another type of succession was observed in Areca catechu stump for three years. The pattern of succession was found as follows:
Coprinus comatus
\[\downarrow\]
Coprinus comatus
&
Psathyrella disseminata
\[\downarrow\]
Psathyrella disseminata
\[\downarrow\]
Polyporus hispidus
\[\downarrow\]
Cellulose and sugar fungi

(Trend of fungal succession in woody tissues)

It appeared that *C. comatus*, lignin decomposers was succeeded by *P. disseminata* and thereby *P. hispidus* and cellulose and sugar fungi in the last stage.

The results on the whole showed that:

1. The same fungi could grow in the same woody substrate year after year with the variation in number, maximum number being found in the second year of the successive stages (Case A).

2. The same type of fungi grew in the same woody substrate year after year with numerical variation, the maximum number was found in the third year of the successive stages (Case B).

3. In the same woody substrate different fungi could colonize in successive stages (Case C).