

University Grants Commission
Western Regional Office
Ganeshkhind, Pune – 411007

11 FEB 2009

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File No: 47-632/08 (WRO)

The Accounts Officer
University Grants Commission
Ganeshkhind, Pune-411007

**Subject: Financial assistance to college teachers for undertaking Minor Research Projects –
Release of first installment.**

Sir,

The UGC on the recommendations of the Expert Committee has approved the Minor Research Project entitled "Aphyllophorales from Jalgaon Dist. Of North Maharashtra" in the subject **Botany** to be undertaken by Prof. Patil S. V., **TES's Bhusawal Arts, Science & P.O. Naha Commerce College, Bhusawal, Jalgaon-425201**. The financial assistance of the UGC would be limited to Rs.70000/- (Rupees Seventy thousand Only) for a period of two years. An amount of Rs.52500/- (Rupees Only) is presently being sanctioned as the first installment.

Non-Recurring Grant for Two years	Amount (Rs)	Recurring grant	1 st Year Amount	2 nd Year Amount
Books & Journals	10000 ✓	Contingency	5000	5000
Equipment	25000 ✓	Special Needs	0	0
		Travel/Field work	7500 ✓	7500 ✓
		Chemicals & Glassware	5000	5000
		Others	0	0
Total (Rs.)	35000		17500	17500

Total amount for the project: 70000/-

The grant is subject to the terms and conditions as mentioned below.

1. A Certificate of Acceptance of the conditions governing the research project should be submitted immediately to this office.
2. The amount of the grant shall be drawn by the Accounts Officer (D.D.O), University Grants Commission on the grant-in-aid bill and shall be disbursed to and credited to the above mentioned institute through Cheque/D.D.
3. The sanctioned amount is debatable to the major Head 5.3.3. and is valid for payment during the financial year 2008 -2009 only.
4. The grant is subject to adjustment on the basis of Utilization Certificate in prescribed proportion submitted by University/College/Institute.

NOTE:

1. **Date of implementation will be the date of sanction and receipt of first installment.**
2. **Please send the Acceptance Certificate to this office immediately (copy enclosed)**
3. **Please send one copy of the project completion report (PCR) to Director, INFLIBNET, Gujarat University Campus, Navrangpura, Ahmedabad for records.**

UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG
NEW DELHI – 110 002.

**PROFORMA FOR SUBMISSION OF INFORMATION AT THE TIME
OF SENDING THE FINAL REPORT OF THE WORK DONE ON THE
PROJECT**

1. NAME AND ADDRESS OF THE PRINCIPAL INVESTIGATOR **Dr. S.V. Patil.**
2. NAME AND ADDRESS OF THE INSTITUTION **Bhusawal Arts, Science and
P.O.Nahata Commerce College Bhusawal Dist.- Jalgaon (M.S.)**
3. UGC APPROVAL NO. AND DATE ...**F.47-632 /08** Dated **11 -2 - 2009**
4. DATE OF IMPLEMENTATION ...**1 April 2009**
5. TENURE OF THE PROJECT**2 years**
6. TOTAL GRANT ALLOCATED ...**Rs...70000/-**
7. TOTAL GRANT RECEIVED**Rs. 52500/-**
8. FINAL EXPENDITURE**Rs. 52700/-**
9. TITLE OF THE PROJECT **Study of Aphyllophorales from Jalgaon district (M.S.)**
10. OBJECTIVES OF THE PROJECT
 - i. **Survey of the area**
 - ii. **To study the vegetation**
 - iii. **To report the wood rotting fungi.**
 - iv. **Collection of the Aphyllophorales**
 - v. **To study the systematics of the Aphyllophorales**
11. WHETHER OBJECTIVES WERE ACHIEVED**yes**
12. ACHIEVEMENTS FROM THE PROJECT
 - i. **Survey of the area.**
 - ii. **Wood rotting species studied.**
 - iii. **Systematic study of Aphyllophorales was studied .**
 - iv. **List of the taxa made.**
13. SUMMARY OF THE FINDINGS**Separate sheet is attached.**

14. CONTRIBUTIONS TO THE SOCIETY

- i. **Aphylophorales causes rotten in wood is shown**
- ii. **Addition of fungal flora of these area.**

15. WHETHER ANY PH.D. ENROLLED/PRODUCED ... **NO**
OUT OF THE PROJECT

16. NO. OF PUBLICATIONS OUT OF THE PROJECT ... **NIL**
(PLEASE ATTACH RE-PRINTS)

(PRINCIPAL INVESTIGATOR)

(PRINCIPAL)

UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG
NEW DELHI 110 002.

Annual/Final Report of the work done on the Major/Minor Research Project.
(Report to be submitted within 6 weeks after completion of each year).

1. Project report No. **Final**
2. UGC Reference No. **F.47-632 / 08 (WRO)**
3. Period of report: from **April 2009 to March 2011**
4. Title of research project **Study of Aphylophorales from
JALGAON DISTRICT (M.S.)**
5. (a) Name of the Principal Investigator- **Dr. S.V. Patil**
(b) Dept. and University/College where work has progressed
**Dept. of Botany
Bhusawal Arts, Science &
P.O.Nahata Commerce
College, Bhusawal Dist. Jalgaon
(M.S.)**
6. Effective date of starting of the project **April, 2009**
7. Grant approved and expenditure incurred during the period of the report:
 - a. Total amount approved Rs. **70,000/-**
 - b. Total expenditure Rs. **52,700/-**

Report of the work done

i. Brief objective of the project **1. Survey of the area.**

2. Collection of the Aphylophorales.

**3. To study the systematics of the
Aphylophorales.**

4. To study the wood rotting taxa.

5. To study the vegetation.

ii. Work done so far and results achieved and publications, if any,
resulting from the work (Give details of the papers and names of the
journals in which it has been published or accepted for publication)

iii. Has the progress been according to original plan of work and towards
achieving the objective? If not, state reasons

Yes

iv. Please indicate the difficulties, if any, experienced in implementing
the project _____

v. If project has not been completed, please indicate the approximate
time by which it is likely to be completed.

N/A

A summary of the work done for the period (Annual basis) may please be sent to the Commission on a separate sheet

Separate report is submitted.

vi. If the project has been completed, please enclose a summary of the findings of the study.

(Two bound copies of the final report of work done may also be sent to the Commission) - **Two bound copies of final report are submitted to U.G.C.**

One bound copy of final report is submitted to Director, INFLIBNET, Gujarat University Campus, Navrangapura, Ahmedabad.

vii. Any other information which would help in evaluation of work done on the project. At the completion of the project, the first report should indicate the output, such as (a) Manpower trained (b) Ph. D. awarded (c) Publication of results (d) other impact, if any


SIGNATURE OF THE
PRINCIPAL INVESTIGATOR




SIGNATURE OF THE
PRINCIPAL



Information and Library Network Centre

(An Autonomous Inter-University Centre of UGC)

सूचना एवं पुस्तकालय नेटवर्क केन्द्र

(विश्वविद्यालय अनुदान आयोग का स्वायत्त अंतर विश्वविद्यालय केन्द्र)

Rajesh Chandrakar
Scientist - B

22nd May 2012

Dear Shri Sunil Joshi

We thankfully acknowledge the receipt of the project report entitled "Study of Aphyllophorales from Jalgaon district" submitted in hardcopy and softcopy. We would like to inform you that the full project report submitted to the INFLIBNET Centre will be hosted on the digital repository of the project database at the Centre on intranet mode for the walk-in users very soon. However, the bibliographic details of the project will be available to anyone through the Research Project database of the Centre on the website <http://www.inflibnet.ac.in/researchproject/>.

We also request you to kindly visit the INFLIBNET website at <http://www.inflibnet.ac.in> for the latest updates of the Centre and its activities. This is to inform you that INFLIBNET Centre also maintains database of Subject Experts serving in the academic sector of the country. The database has facility of registering the expert online through the website <http://www.inflibnet.ac.in/univexpert/>. You are requested to do the same. If you failed to do so, you may submit your resume to either Dr. Jagdish Arora, Director, at director@inflibnet.ac.in or to me at rajesh@inflibnet.ac.in.

With regards,

Yours Sincerely


(Rajesh Chandrakar)

Shri Sunil Joshi
Associate Professor
Department of Botany
Bhusawal Arts, Science & P O Nahata Commerce College
Jamner Road, N.H. 6 Dist: Jalgaon
Bhusawal-425201

No.2 Aphylophorales from Jalgaon district of Maharashtra

S.V.Patil*

*Department of Botany, Bhusawal Arts,
Science and P.O.Nahta Commerce College of Bhusawal
svp1295@rediffmail.com**Subject - Botany**

<p>Abstract</p> <p>The Polyporaceae have attracted great attention from both the mycologist and the plant pathologists from very early times due to their habits, their large sized fruiting bodies (Basidiocarps) by their timber destructing properties. They exhibit a great diversity of attractive forms which are often colored. They are characterized by development of a porous hymenium consisting of cavities or tubes on the under surface of their basidiocarp. The present study has been undertaken especially with a view to give a detail account of the wood rooting mycobiota. For this present study Jalgaon district is selected where timber valued trees are grown in more numbers. Five genera along with species have been studied in detail. The genera <i>Deadalea</i>, <i>Ganoderma</i>, <i>Hexagonia</i>, <i>Irpex</i>, <i>Polyporus</i>.</p> <p>Key words: - Aphylophorales, Hymenial, Polyporaceae, Basidiocarp, Jalgaon</p> <p>Introduction</p> <p>Decay in wood is caused by wood destroying fungi among which members of polyporaceae are most important. Polypores mainly inhabit wood which is a rich organic substrate and thus provides a suitable food base. They draw their nourishment from the cell wall material, which they break down by enzymatic</p>	<p>activity.</p> <p>There are forests in the hilly region of the satpudas in the northern part of jalgaon district. These forests lie in Chopada, Yawal and Raver talukas. Teak (<i>Tectona grandis</i>, Linn F.), Sisoo (<i>Dalbergia sisoo</i>, Roxb.), Dhavda (<i>Anogissus latifolia</i>, wall), Ain (<i>Terminalia tomentosa</i>, W&A), Palas (<i>Butea frandosa</i>, Konig), Khair (<i>Acacia catechu</i>, willd), Babul (<i>Acacia nilotica</i>, Linn.), Haldu (<i>Chloroxylon swietania</i>, DC), and Anjan (<i>Hardwekia binata</i>, Roxb.) are some of tree such as Mango (<i>Mangifera indica</i>, Linn.), Bor (<i>Zyzyphus jujuba</i>, Lam.) and Custerd apple (<i>Anona squamosa</i>, Linn.) Grass and bamboo also grow in some parts. The original vegetation of this district is quite rich but has been somewhat altered through human interference. The forest is dry deciduous and is rich in angiospermic vegetation, and suitable climate and humidity providing the most favorable condition for the development of a variety of saprophytic and parasitic fungi on their dead and living parts respectively. It is well known that floristic work on mycoflora of this region is the most neglected part of mycological studies. However the basic knowledge of their occurrence and distribution in any other particular region is of immense important for the proper understanding of the</p>
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No.2 Aphyllophorales from Jalgaon district of Maharashtra

S.V.Patil*

*Department of Botany, Bhusawal Arts,
Science and P.O.Nahta Commerce College of Bhusawal
svp1295@rediffmail.com**Subject - Botany**

<p>Abstract</p> <p>The Polyporaceae have attracted great attention from both the mycologist and the plant pathologists from very early times due to their habits, their large sized fruiting bodies (Basidiocarps) by their timber destructing properties. They exhibit a great diversity of attractive forms which are often colored. They are characterized by development of a porous hymenium consisting of cavities or tubes on the under surface of their basidiocarp. The present study has been undertaken especially with a view to give a detail account of the wood rooting mycobiota. For this present study Jalgaon district is selected where timber valued trees are grown in more numbers. Five genera along with species have been studied in detail. The genera <i>Deadalea</i>, <i>Ganoderma</i>, <i>Hexagonia</i>, <i>Irpex</i>, <i>Polyporus</i>.</p> <p>Key words: - Aphyllophorales, Hymenial, Polyporaceae, Basidiocarp, Jalgaon</p> <p>Introduction</p> <p>Decay in wood is caused by wood destroying fungi among which members of polyporaceae are most important. Polypores mainly inhabit wood which is a rich organic substrate and thus provides a suitable food base. They draw their nourishment from the cell wall material, which they break down by enzymatic</p>	<p>activity.</p> <p>There are forests in the hilly region of the satpudas in the northern part of jalgaon district. These forests lie in Chopada, Yawal and Raver talukas. Teak (<i>Tectona grandis</i>, Linn F.), Sisoo (<i>Dalbergia sisoo</i>, Roxb.), Dhavda (<i>Anogissus latifolia</i>, wall), Ain (<i>Terminalia tomentosa</i>, W&A). Palas (<i>Butea frandosa</i>, Konig), Khair (<i>Acacia catechu</i>, willd), Babul (<i>Acacia nilotica</i>, Linn.), Haldu (<i>Chloroxylon swietania</i>, DC), and Anjan (<i>Hardwekia binata</i>, Roxb.) are some of tree such as Mango (<i>Mangifera indica</i>, Linn.), Bor (<i>Zyzyphus jujuba</i>, Lam.) and Custerd apple (<i>Anona squamosa</i>, Linn.) Grass and bamboo also grow in some parts. The original vegetation of this district is quite rich but has been somewhat altered through human interference. The forest is dry deciduous and is rich in angiospermic vegetation, and suitable climate and humidity providing the most favorable condition for the development of a variety of saprophytic and parasitic fungi on their dead and living parts respectively. It is well known that floristic work on mycoflora of this region is the most neglected part of mycological studies. However the basic knowledge of their occurrence and distribution in any other particular region is of immense important for the proper understanding of the</p>
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yellowish brown poroid in young basidiocarps, becoming daedaloid of lamelloid with maturity, sometimes poroid near the base, lamelloid of daedaloid near periphery, pore tubes colourous with hymenial surface, 0.1-2.3 cm long. Hyphae trimitic, skeletal hyphae light yellow, thick walled, aseptate unbranched, 4-6.5 um diameter, binding hyphae light yellow to almost hyaline, thick walled, acetate, profusely branched with short branches, 1.2-4 um diameter, generative hyphae hyaline, thin walled, branched, septate, 1.6-4.8um in diameter.

Hexagona apiaria pers.

Sporophore sessile of sub-stipitate. With a knob like short stalk, dimidiate to applanate, leathery to rigid and brittle on drying 8-12 x 5-7 x 1.2-1.5 cm, upper surface light brown to reddish brown to almost blackish brown near the base, indistinctly zonate, radiately wrinkled, densely covered with coarse, branched brown hair, becoming glabrous at places in old specimens, margin wavy, context reddish brown, fibrous, upto 6-7 mm thick, hymenial surface yellowish brown, pores large, hexagonal 3-6 per cm. 5-8 mm deep, basidiospores not observed, hyphal nature trimitic. Skeletal hyphal yellowish brown, slightly thick walled to thick walled with lumen or obliterated, unbranched, aseptate, 3-5.5 um broad, binding hyphae yellowish brown, thick walled with lumen narrow or obliterated, profusely branched, aseptate, 1.5-3 um broad, generative hyphae hyaline, thin walled, Branched, septate with clamp connections, 1.7-

4.5 um broad.

Irpex consors Berk.

Sporophore sessile, reflexed, dimidiate, corly, imbricate margin thin, wavy, involute, when dry, brittle upper surface white soon becoming light yellow, smooth, convex, zonate, minutely wrinkled, context, light coloured, fibrous upto 1mm thick, hymenial surface light yellow, irregularly, poroid at margins, soon becoming spiny, spines marrow, conical, 1-3 mm lon, 2-3 per mm, hymenious continuous between adjacent spines, basidia clavate, 7-10x 2.5-3.7 um, basidiospores hyaline, thin walled, round to oval, 4-7.5 x 3.5-5 um, gleocystidia hymenial, thin walled, with hyaline granular contents, 27-38 x 8-12um hyphal nature dimitic. Skeletal hyphae hyaline to pale, thick walled, lumen narrow, branched 3-5 um broad, binding hyphae hyaline, thin walled with clamp connections, 3-4.5um broad.

Polyporus gilvus Klotzsch.

Sporophore stipitate, growing singly or in groups adjacent pilei sometimes fusing together when they grow in groups, leathery, drying hard, fibelliform to semi circular an to sometimes reniform, 3-6.3 x 3-5 x 0.1-0.3 cm, stalk lateral, black, expanded at base into flat globular disc, brownish yellow to almost black, upper surface yellowish pinkish brown, radish brown to almost black with sometimes yellow margin and pubescent zones, becoming glabrous when old, narrowly concentrically zonate, margin entire, sometimes irregular, Context pale yellow, floccose, 0.1-0.3cm thick, hymenial surface

yellowish brown poroid in young basidiocarps, becoming daedaloid of lamelloid with maturity, sometimes poroid near the base, lamelloid of daedaloid near periphery, pore tubes colourous with hymenial surface, 0.1-2.3 cm long. Hyphae trimitic, skeletal hyphae light yellow, thick walled, aseptate unbranched, 4-6.5 um diameter, binding hyphae light yellow to almost hyaline, thick walled, acetate, profusely branched with short branches, 1.2-4 um diameter, generative hyphae hyaline, thin walled, branched, septate, 1.6-4.8um in diameter.

Hexagona apiaria pers.

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Polyporus gilvus Klotzsch.

Sporophore stipitate, growing singly or in groups adjacent pilei sometimes fusing together when they grow in groups, leathery, drying hard, fibelliform to semi circular an to sometimes reniform, 3-6.3 x 3-5 x 0.1-0.3 cm, stalk lateral, black, expanded at base into flat globular disc, brownish yellow to almost black, upper surface yellowish pinkish brown, radish brown to almost black with sometimes yellow margin and pubescent zones, becoming glabrous when old, narrowly concentrically zonate, margin entire, sometimes irregular, Context pale yellow, floccose, 0.1-0.3cm thick, hymenial surface

cream coloured to light pinkish brown, margin sterile upto 2mm, pores globose to subglobose, 6-8 per mm, pore tubes 0.1 cm long, basidia clavate, 8-10 x 3-4.5µm, basidiospores brownish, oval 2.5-4 µm diameter, skeletal hyphae hyaline to nearly hyaline, thick walled with usually narrow lumen, aseptate, unbranched, 4-4.8µm diameter, binding hyphae thick walled, branched, with narrow diameter.

***Polyporus zonalis* Berk.**

Basidiocarp sub-stipitate to sessile, usually attached by narrow base, diamidiate to flabelliform,, imbricate, leathery when fresh, hard and rigid when dry, 1-6.5 x 1-4.5 x 0.1-0.4 cm. Upper surface pale or pinkish buff when young, becoming raddish brown with age , concentrically zonate, tomentose , becoming somewhat glabrous and with radiating wrinkles drying, margin thin or rounded, incurved of drying, context white or light coloured, fibrous, upto 4 mm thick , hymenial surface white to pinkish, with a silky sheen, with upto 3mm sterile margin, pores round, oval to somewhat angular, 6-9 per mm, pore tubes concolorous with the context or slightly deeper, upto 2-2.5 mm long, basidia clavate to sub clavate 10-12 x 6-8 µm, Basidiospores hyaline, subglobose to globose, apiculate, one guttulate, 3-4.5 x 3-3.5µm cystidia clavate, incrustated thin to thick walled, 12-15 x 6-10 µm, hyphae dimitic, skeletal hyphae thick walled with lumen usually narrow or obliterated, simple septate, 5-7.5µm diameter generative hyphae thin walled of slightly thicker walled simple septate.

Conclusion

Extensive collection was made in different season, particularly rainy season and after that the different localities in Jalgaon district especially northern part which is hilly and having rich vegetation. These collection were quit fruitful as a good number of fungi belonging to the Basidiomycetes (Aphyllphorales) which are screened as the wood rotting fungi.

From the collection *Deadalea*, *Hexagonia*, *Irpex*, *Polyporus* have been worked out with other basidiomycetes. These are found on *Tectona grandis*, *Mangifera indica*, *Acacia arabica*, *Dalbergia sisoo*, *Terminalia arjuna* etc. fungi belonging to Aphyllphorales are quit common in the Jalgaon district. Five genera along with species have been studied in detail. The genera *Deadalea*, *Ganoderma*, *Hexagonia*, *Irpex*, *Polyporus* are abundantly found in this area as compare to the other genera.

Thus the present work provides the detailed information about the mycoflora of the Jalgaon district, quit a good number of these are reported for the first time from this area and the number of fungal taxa known from this area (Jalgaon district) has increased. Evidently, one can hopefully look for better future for such type of studies in this direction which will prove quit fruitful.

Acknowledgement

The Authors are grateful to The Principal, Dr. Mrs. M. V. Waykole, Bhusawal Arts, Science and P. O. Nahata Commerce College, Bhusawal for providing library.

References

- Bakshi, B.K. (1971) Indian Polyporaceae (On Trees and Timber), *ICAR Publ.* New Delhi, 1-246.
- Thind, K.S.,and Singh, S. (1976) The Aphyllophorales in India *Indian Phytopath.*, 26 : 2-23.
- Thind, K.S.,and Singh S. (1975) Recent trend in taxonomy of the Aphyllophorales.' In *Advances in Mycology and Plant Pathology*, ed. by S.P. Raychaudhary.
- Thind, K.S.,and Dhande, R.S. (1976) The Polyporaceae of India XI *Indian Phytopath* 31: 463-472.
- Vaidya, J.G. (1991) Valid names for some common wood rotting Polypores,their synonyms and authenticity.
J.Ind.Acad.Wood Sci. 22 (1) : 59-74.

॥ विद्या दानम् महत् पुण्यम् ॥
ताप्ती एज्युकेशन सोसायटी, भुसावळचे
Tapti Education Society's

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BHUSAWAL ARTS, SCIENCE & P. O. NAHATA COMMERCE COLLEGE, BHUSAWAL-425201

पो. बॉ. नं. ३१,
दुधवनी क्र. २४०६०६, २४०७४६
फॅक्स क्र. ०२५८२ - २४०७४६



NAAC Re-Accredited
with CGPA of 3.30 on Four Point Scale
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UGC Honoured College
with Potential for Excellence

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website : www.basponccollege.org


संदर्भ क्रमांक :
Ref. No.

दिनांक : 27/10/2015
Date :

Assets Certificate

It is certified that the following equipment has been handed over to the college.

1. Sony Digital Camera


PRINCIPAL
Signature of Principal
Bhusawal Com. College, Bhusawal
With seal


Signature of Principal investigator