# GOVERNMENT DEGREE COLLEGE FOR WOMEN

## RAMAGIRI, NALGONDA, TELANGANA-508001

# CRITERION VII

# METRIC: 7.1.6

# ENVIRONMENT
# &
# ENERGY AUDIT REPORT

# 2020-21

# Government Degree College for Women

(Affiliated to Mahathma Gandhi University)
Ramagiri, Nalgonda, T.S - 508 001
Office : 08682-222689/690 E-mail : prl-gdcw-nlg-ce@telangana.gov.in
Website : gdcts.cgg.gov.in/ramagiri.edu E-mail : officegdcw.nlg@gmail.com

**Dr. Ghanshyam**
M.A., M.Phil, Ph.D
Principal


## Report
## on

# GREEN AUDIT
## (Environmental Audit)
## of

# GOVERNMENT DEGREE COLLEGE FOR WOMEN
# NALGONDA

# Government Degree College for Women

(Affiliated to Mahatma Gandhi University)

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## GREEN Audit Committee

1) Dr. Ghanshyam, Principal, GDC(W), Nalgonda – Chairman
2) Sri B.S.S.P. Rajashekar, IQAC coordinator - Vice-Chairman
3) Sri K. Chandrashekar, Principal, N.G. College – Special Invitee
4) Sri Chalakani Bixmaiah, Asst. Prof. of Physics - Coordinator
5) Sri S. Veeraiah, Asst. Prof. of Botany - Member
6) Sri K. Ravi, Asst. Prof. of Chemistry - Member
7) Sri R. Naresh, Asst. Prof. of Zoology - Member

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# GREEN Audit Committee

## Signatures

This is to certify that this report contains 27 pages excluding 03 annexure documents namely Annexure-1 for Energy audit, Annexure-2 for Green campus management and Annexure-3 for Faunal Diversity.

1) Dr. Ghanshyam, Principal, Govt. Degree College (W), Nalgonda. – Chairman

Principal
Govt. Degree College (Women)
Nalgonda - 508001, T.S.

2) Sri B.S.S.P. Rajashekar, IQAC coordinator, GDC (W), Nalgonda. - Vice-Chairman

3) Sri K. Chandrashekar, Principal, Nagarjuna Govt. College, Nalgonda. – Special Invitee

Principal
Head of the Physics Department,
Nagarjuna Government College
(Autonomous), Nalgonda. (A.P.)

4) Sri Chalakani Bixmaiah, Asst. Prof. of Physics, GDC (W), Nalgonda. - Coordinator

Head
Department of Physics
Govt. Degree College (Women)
Nalgonda - 508001, T.S.

5) Sri S. Veeraiah, Asst. Prof. of Botany, GDC (W), Nalgonda. - Member

6) Sri K. Ravi, Asst. Prof. of Chemistry, GDC (W), Nalgonda. - Member

7) Sri R. Naresh, Asst. Prof. of Zoology, GDC (W), Nalgonda. - Member

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## PROFORMA FOR GREEN AUDIT

### Introduction

The term "Green" means Eco-friendly or not damaging the Environment. This can acronymically be called as "Global Readiness in Ensuring Ecological Neutrality" (GREEN). Green accounting can be defined as systematic identification, quantification, recording, reporting and analysis of components of ecological diversity. Hence we do the audit of water quality, air quality, noise, energy, waste, greenery, carbon footprint and faunal diversity in the campus of our college. "Green Auditing", an umbrella term, is known by another name "Environmental Auditing".

### 1. College Profile

Name of the College: **Government Degree College for Women, Nalgonda**

Address: **Ramagiri, Nalgonda, Nalgonda Dist., Telangana, PIN - 508001.**

Contact Info: 9949089091, 95052528822

Campus Area: **1 ACRE 13 GUNTHAS or 5362.29 square meter**

[1 acre = 4046.86 square meter & 1 GUNTHA = 101.17 square meters]

Built-up Area: **3912.29 square meter**

Is the building has ventilators for natural air flow in all rooms: **Yes**

**The student and faculty strength of the college:**

| Strength | Male | Female | Total |
|---|---|---|---|
| No of students | NIL | 2475 | **2475** |
| No of Teaching Staff | 33 | 26 | **59** |
| No of Non-Teaching staff | 08 | 20 | **28** |
| **Total** | **41** | **2521** | **2562** |

## 2. Physical Structure

The available land of the college: **01** Acre and **12** Guntas.

The built-up area of the college: **3912.29** Square meters.

| | |
|---|---|
| No. of Class Rooms | 17 + 1(virtual class room) |
| No. of Laboratories | 13 |
| No. of Conference halls | 2 |
| Library Halls | 04 |
| Auditorium | 01 |
| Canteen | 01 |
| Any other (please specify) | -- |

## 3. AUDITING FOR WATER MANAGEMENT

1. List out uses of water in your college.

   For i) Watering Plants, ii) washrooms, iii) Sinks in Departments and Laboratories

2. What are the sources of water in your college?

   i) Bore wells, ii) Municipality water

3. How many wells are there in your college?

   02

4. No. of motors used for pumping water from each well?

   01

5. What is the total horse power of each motor?

   1 hp

6. What is the depth of each well?

   150 feet

7. What is the present depth of water in each well?

   80 feet

8. How does your college store water?

   In tanks on top of the buildings

9. Quantity of water stored in your overhead water tanks?

   13,500 Liters.

10. Quantity of water pumped every day?

    14,850 Liters

11. If there is water wastage? Specify why.

    Yes, by overflowing of tanks.

12. How can the wastage be prevented / stopped?

    Wastage can be prevented by placing sensor based automatic water level controller.

13. Locate the point of entry of water and point of exit of waste water in your College.

    Point of entry is from bore wells. Exit point is next to the RUSA building and into the municipality drainage.

14. Where does waste water come from?

    From hand wash centers

15. Where does the waste water go?

    Goes into municipality drainage

16. What are the uses of waste water in your college?

    Waste water channelized to plants

17. What happens to the water used in your labs? Whether it gets mixed with ground water?

    No

18. Is there any treatment for the lab water?

    No

19. Whether green chemistry methods are practiced in your labs?

    No

20. Write down four ways that could reduce the amount of water used in your college.

    i) We turn off the tap while sudsing our hands

    ii) we water the garden and plants only when it needs water

    iii) Ensure that there are no leaks at taps, hoses, couplings and gate valves

    iv) Water the plants in the early morning/late evening to decrease the amount of evaporation of water.

21. Record water use from the college water meter for six months.

    Yet to be recorded

22. Bimonthly water charges paid to water connections if any.

No charges paid.

23. No. of water coolers. Amount of water used per day? (in liters)

    No

24. No. of water taps. Amount of water used per day?

    86 (eighty six). Amount of water used per day is around 14,850 liter.

25. No. of bath rooms in staff rooms, common, hostels. Amount of water used per day?

    nil

26. No. of toilet, urinals. Amount of water used per day?

    Toilets – 18, Urinals – 03

27. No. of water taps in the canteen. Amount of water used per day?

    No

28. Amount of water used per day for garden use.

    6500 L

29. No. of water taps in laboratories. Amount of water used per day in each lab?

    18 taps. 250 liters

30. Total use of water in each hostel?

    No Hostel

31. At the end of the period, compile a table to show how many liters of water has been used in the college for each purpose.

| S. No. | Purpose of water usage | No. of Liters |
|---|---|---|
| 1 | For Girls' toilets | 6000 |
| 2 | For Gents' toilets | 1000 |
| 3 | For garden and plants | 6500 |
| 4 | For hand wash centers in ground | 1000 |
| 5 | For hand washes in Departments & Labs | 250 |
| 6 | For ground | 100 |

32. Is there any water used for agricultural purposes?

No

33. Does your college harvest rain water?

    Yes

34. If yes, how many rain water harvesting units are there?

    01

35. How many of the taps are leaky? Amount of water lost per day?

    NA

36. Are there signs reminding people to turn off the water?

    Yes

37. Is there any waterless toilets?

    No

38. How many water fountains are there?

    00

39. How many water fountains are leaky?

    00

40. Is drip irrigation used to water plants outside?

    NO

41. How often is the garden watered?

    Thrice in a week during rainy and winter seasons. Daily once in summer season.

42. Quantity of water used to watering the ground?

    100 L when play games

43. Quantity of water used for bus cleaning?

    NA

44. Amount of water for other uses? (Items not mentioned above)

    NA

45. Area of the college land without tree/building canopy.

    674 square feet.

46. Is there any water management plan in the college?

    Rain water harvesting.

47. Are there any water saving techniques followed in your college? What are they? - Yes

    1) We have installed sensor based automatic ON/OFF control meter to

the motor which saves overflowing water and electrical energy also. 2) We turn off the tap while sudsing our hands. 3) We water the garden and plants only when it needs water. 4) Ensure that there are no leaks at taps, hoses, couplings and gate valves.

Please share Some IDEA for how your college could save more water.

i. We have installed sensor based automatic ON/OFF control meter to the motor which saves overflowing water in turn ground water and electrical energy also.
ii. If the budget permits, we will get installed sensor based taps.
iii. If the budget permits, we will get fitted aerators to the taps at hand wash centers and in departments.

## 4. RESULTS OF WATER QUALITY

| Parameters | Bore Well Water-1 | Bore Well Water-2 | Municipal Tap water | Standard value (BIS) |
|---|---|---|---|---|
| Dissolved Oxygen (mg/l) | - | - | - | 6-8 |
| Acidity (mg/l) | - | - | - | 200 |
| Alkalinity (mg/l) | 220 | 260 | 120 | 200 |
| Chloride (mg/l) | 160 | 240 | 120 | 250 |
| Hardness (Total) | 420 | 600 | 304 | 200 |
| Conductivity (µs/cm) | 890 | 1180 | 920 | |
| pH | 7.8 | 7.6 | 7.5 | 6.5 - 8.5 |
| Total Dissolved Solids (ppm) | - | - | - | 500 |
| Salinity (ppt) | - | - | - | |
| Total coliform | Nil | Nil | Nil | 0 |
| Fecal coliform | - | - | - | 0 |
| Chloride (as Cl) | 160 | 240 | 120 | |
| Floride (as F) | 1.0 | 1.0 | 0.8 | |
| Turbidity(NTUS) | 0.2 | 0.2 | 0.3 | |

**Note:** Lab. Report is attached

# GOVERNMENT OF TELANGANA

**WATER QUALITY MONITORING LAB, OLD MUNICIPAL COMPLEX, NALGONDA**
**(Directorate of I.P.M.PH.Labs, Food (H) Admn. Narayanguda, Hyd.)**

## REPORT OF PHYSICO CHEMICAL ANALYSIS OF WATER

Sample From : the principal, GDC (W) Nalgonda.

Collected by : self

Collected On : 26.8.2021 Received On : 26.8.21 Reported On : 4.9.2021

Lab Ref. No. : 2057 2059

Source of Water : Borewell – 1 North east corner of the College Premises | Borewell – 2 West boundary of college.

### RESULTS

| | | | |
|---|---|---|---|
| Colour | : | Colourless | colourless |
| Turbidity (NTUS) | : | 0.2 | 0.2 |
| Odour | : | odourless | odourless |
| PH at °C | : | 7.8 | 7.6 |
| Electrical Conductivity at 25°C (Micro Mhos/CM) | : | 890 | 1180 |

### FOLLOWING RESULTS IN MILLIGRAMS PER LITRE

| | | | |
|---|---|---|---|
| Alkalinity (as $CaCo_3$) Phenolpthalein | : | Nil | Nil |
| Total alkalinity | : | 220 | 260 |
| Total Hardness (as $CaCo_3$) | : | 420 | 600 |
| Calcium Hardness (as $CaCo_3$) | : | 320 | 480 |
| Ammonical Nitrogen ($NH_3$-N) | : | Nil | Nil |
| Nitrite (as N) | : | Nil | Nil |
| Nitrate (as N) | : | – | – |
| Chloride (as Cl) | : | 160 | 240 |
| Fluoride (as F) | : | 1.0 | 1.0 |
| Iron (as Fe) | : | Nil | Nil |

**REMARKS :-** All the analysed chemical parameters of the above Water Samples are with in the permissible limits. Physico-Chemically Satisfactory for drinking Purpose

Junior Analyst
Water Quality Monitoring Lab
Old Municipal Complex
NALGONDA

Junior Analyst
Water Quality Monitoring Lab,
Nalgonda.

# GOVERNMENT OF TELANGANA

WATER QUALITY MONITORING LAB, OLD MUNICIPAL COMPLEX, NALGONDA
(Directorate of I.P.M.PH.Labs, Food (H) Admn. Narayanguda, Hyd.)

## REPORT OF PHYSICO CHEMICAL ANALYSIS OF WATER

Sample From : the principal, Govt Degree college for women Nalgonda.

Collected by : self

Collected On : 26.8.2021 Received On : 26-8-21 Reported On : 4.9.2021

Lab Ref. No. : 2061

Source of Water : Krishna water sump near physics Dept.

### RESULTS

| | | |
|---|---|---|
| Colour | : | colourless |
| Turbidity (NTUS) | : | 0.3 |
| Odour | : | odourless |
| PH at °C | : | 7.5 |
| Electrical Conductivity at 25°C (Micro Mhos/CM) | : | 920 |

### FOLLOWING RESULTS IN MILLIGRAMS PER LITRE

| | | |
|---|---|---|
| Alkalinity (as $CaCo_3$) Phenolpthalein | : | nil |
| Total alkalinity | : | 120 |
| Total Hardness (as $CaCo_3$) | : | 304 |
| Calcium Hardness (as $CaCo_3$) | : | 208 |
| Ammonical Nitrogen ($NH_3$-N) | : | nil |
| Nitrite (as N) | : | nil |
| Nitrate (as N) | : | – |
| Chloride (as Cl) | : | 120 |
| Fluoride (as F) | : | 0.8 |
| Iron (as Fe) | : | nil |

**REMARKS :-** the above water sample is physico-chemically satisfactory for drinking purpose.

Junior Analyst
Water Quality Monitoring Lab
Old Municipal Complex
NALGONDA

Water Quality Monitoring Lab,
Nalgonda.

Government of Telangana

# WATER QUALITY MONITORING LAB

Directorate of I.P.M., P.H. Labs, Food (H) Administration,
Old Municipal Complex, Nalgonda - 508 001.

## REPORT OF BACTERIOLOGICAL ANALYSIS OF WATER

1. Sample From : the Principal, Govt Degree College for women, Nalgonda.
2. Collected by : Self
3. Collected on : 26.8.2021 4. Received on : 26.8.21

| Lab Ref. No. | Source | Exact location | Residual Chlorine mg per liter | Total Coliform Bacteria (MPN Index) per 100 ml. | Faecal Coliform Bacteria per 100ml | Esch. Coli. per 100ml |
|---|---|---|---|---|---|---|
| 2056 | Borewell | North East Corner of the College Premises | – | Nil | – | – |
| 2058 | Borewell | West boundary of college | – | Nil | – | – |
| 2060 | Krishna Water | Sump near Physics Dept | – | Nil | – | – |

Remarks: the above Water Samples are bacteriologically Satisfactory for drinking purpose.

Junior Analyst
Water Quality Monitoring Lab
Old Municipal Complex
NALGONDA

Junior Analyst.
Water Quality Monitoring Lab
Nalgonda.

## 5. Water Quality analysis (Biological) report of college – II

(with Photographic evidence)

| S. No. | Parameter/ WHO permissible level | Zooplankton (No ofSamples/Sites) | Methodology |
|---|---|---|---|
| 1 | Protozoan (Ciliates) | Stagnant water is not available in the college campus. Main drinking water source is bore water. Hence no zooplanktons | |
| 2 | Rotifers | | |
| 3 | Ostracods | | |
| 4 | Insect Larvae | | |
| 5 | Water Fleas | | |
| 6 | Bivalves | | |
| 7 | Snails | | |
| 8 | Mussels | | |
| 9 | Any Other (Specify) | | |

## 6. AIR QUALITY DETERMINATION

### Air Quality Index (parameters studied/recorded/ Seasonal):

| | |
|---|---|
| $NO_x$ | 23.18 µg/m³ |
| NO | - |
| $NH_3$ | 18.5 µg/m³ |
| $SO_2$ | 5.36 µg/m³ |
| $O_3$ | - |
| PM2.5 | 28.75 µg/m³ |
| PM10 | 56.7 µg/m³ |
| CO | - |
| Humidity | - |
| Barometric Pressure | - |
| Wind Speed | - |
| Wind Direction | - |
| Sun Rise | - |
| Sun Set | - |

**Note**: Above data is the average of that of 6 months (Jan to July 2021). Above data belongs to Nalgonda town and is as per the reports of Pollution Control Board, Telangana State.

## 7. Measurements of Noise level in and around the college

| S. No. | Place (S) | Measurements (Duration in seconds) | Minimum (dBA) | Maximum (dBA) | Average (dBA) |
|---|---|---|---|---|---|
| 1 | Library | 60 | 38 | 72 | 51 |
| 2 | Canteen | 60 | 40 | 82.1 | 51.7 |
| 3 | Play ground | 60 | 40.2 | 74.7 | 56 |
| 4 | Auditorium | 60 | 41.6 | 74.9 | 54.4 |
| 5 | Science Block | 60 | 33.3 | 63 | 48 |
| 6 | Any Other (Specify) | - | - | - | - |

## 8. AUDITING FOR ENERGY MANAGEMENT

1. List ways that you use energy in your college. (Electricity, electric stove, kettle, microwave, LPG, firewood, Petrol, diesel and others).

i) Electricity, LPG.

2. Electricity bill amount for the last year:

Rs. 2, 52,522.00

3. Amount paid for LPG cylinders for last one year?

1000

4. Weight of firewood used per month and amount of money spent? Also mention the amount spent for petrol/diesel/ others for generators?

No firewood.

5. Are there any energy saving methods employed in your college? If yes, please specify. If no, suggest some.

Yes. i) Sensors, ii) LED lights/LED tubes iii) using power efficient devices

6. How much money does your college spend on energy such as electricity, gas, firewood, etc. in a month?

Rs. 2, 52,522.00 for electricity and Rs. 1000 for gas.

7. How many incandescent (tungsten) bulbs have your college installed? Mentions use (Hours used/day for how many days in a month).

NA

8. How many inverters yourcollege installed? Mentions use (Hours used/day for how many days in a month)

NO

9. How many heaters are used in the canteen of your college? Mentionthe use (Hours used/day for how many days in a month).

No

10. Are any alternative energy sources/non-conventional energy

sourcesemployed / installed in your college? (Photovoltaic cells for solar energy,windmill, and energy efficient stoves, etc...).

Yes, Photovoltaic cells/panels on the roof of auditorium.

11. Do you run "switch off" drills at college?

Yes

12. Are your computers and other equipment put on power-saving mode?

No, we shutdown them if we do not use them

13. Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby mode most of the time? If yes, how many hours?

No, we shutdown them if we do not use them

14. What are the energy conservation methods adapted by your college?

i. using sensors to electric motors such that motor automatically OFF/ON when tank filled & when tank becomes empty.

ii. using sensors to street lights such that lights automatically ON/OFF during night/day

iii. All failed CFL tubes are replaced by LED tubes

iv. CRT based TV is replaced with star rated LED TV

v. CRT based monitors are replaced with LCD monitors

vi. Old not working fans are replaced with latest power efficient fans

vii. Do not put computers, printers & Xerox machine in standby mode instead; we turn off them if we don't use them.

vii. Use natural ventilation

15. How many boards displayed for saving energy awareness?

50

16. How much ash is collected after burning fire wood per day in the canteen?

Fire wood is not used.

17. Write a note on the methods/practices/adaptations by which you can reduce the energy use in your college campus in future.

i. Get detach the connection of fans and tube lights which do not work

ii. Get change the wiring

iii. By continuing Switch Off drills in future also

iv. By continuing the methods stated in Q. No. 14 in future also.

v. In case of Air Conditioner rooms

- Proper sealing of doors and windows
- Continuously keep closing after opening doors (by putting notice on both sides of doors)
- Maintain regular (quarterly) servicing of ACs
- Keep maintain the temperature at 23° C/24° C
- Use same brand throughout the institution
- Use fan/breeze instead of AC, when it is not necessary

**Note:** Answers to the questions from 7 to 35 (in given CCE format) are given in separate list i.e. **Annexure-1**.

## 9. AUDITING FOR WASTE MANAGEMENT

| S. No. | Name of the Item | | Response |
|---|---|---|---|
| 1 | What is the total strength of students, teachers and Non-teaching staff inyour College? | | |
| | i. Strength of teachers | Gents | 33 |
| | | Ladies | 26 |
| | ii.Strength of non-teaching staff | Gents | 08 |
| | | Ladies | 20 |
| | iii.Strength of students | Gents | nil |
| | | Ladies | 2475 |
| | Total Strength in the college (i+ii+iii) | | 2562 |
| 2 | Which of the following are available in your College? | | |
| | a) area occupied | | 1 Acre 13 Guntas (5362 square meter) |
| | b) Garden area | | 1423 sq. feet (0.032 acres) |
| | c) Garbage dump (number) | | 01 |
| | d) Playground area | | (7870+5130 = 13,000) square feet |
| | e) Laboratory area | | 13,335 square feet |

| | | |
|---|---|---|
| | f) Kitchen area | No Kitchen |
| | g) Canteen area | 144 square feet |
| | h) Toilets (number) | 17 |
| | i) Parking (Car/scooter) area | 100 square yard |
| | j) Number of class rooms | 19 |
| | k) Office rooms | 14 (including departments) |
| | l) Others | library rooms - 4 |
| | | auditorium hall -1 |
| | | women's waiting room -1 |
| | | NSS room -1 |
| 3 | Which of the following are found near your college? Mark the level of disturbance it creates for the college in a scale of 1 to 9. | |
| | a) Municipal dump yard | No |
| | b) Garbage heap | No |
| | c) Public convenience Sewer line | No |
| | d) Stagnant water | No |
| | e) Open drainage Industry | No |
| | f) Bus / Railway station | No |
| | g) Market/Public halls | No |
| | h) shopping complex | No |

**WASTE**

Does your college generate any waste? If so, what are they?

Yes, Solid waste.

How much quantity?

5.5 kg

Number or weight E-waste Hazardous waste (toxic):

e-waste data is provided in separate sheet.

Solid waste

Papers: 2 kg/day

Dry leaves

3 kg/day

Canteen

0.5 kg/day

Liquid waste

NA

Glass

1 or 2 test tubes, 1 or 2 puppets per semester

Unused equipment -

NA

Medical waste if any – No

Napkins Others (Specify):

Yes

Is there any waste treatment system in the college?

Yes, there is Vermi Compost system for bio-degradable waste.

Is there any treatment for toilet/urinal/sanitary napkin waste?

Yes, there are three incinerators for napkin waste.

1 What is the approximate quantity of waste generated per day? (in Kilograms) Office, Laboratories, Canteen/kitchen.

In office-0.5 kg, in canteen – 0.5 kg

2 Why waste is a problem?

i) Causes health problems, ii) Occupies space

3 Whether waste is polluting ground/surface water?

No, but solid waste makes the ground ugly.

4 Whether waste is polluting the air of the college?

No

5 How is the waste generated in the college managed?

1) Composting – biodegradable waste is shifted to vermicompostand other waste is taken out by municipality staff.
2) Reusing – waste water of RO plant is totally reused.

6 How many separate boxes do you think you would need to put into a Classroom to start a waste segregation and recycling campaign?

Papers: 2 kg/day

Dry leaves

3 kg/day

Canteen

0.5 kg/day

Liquid waste

NA

Glass

1 or 2 test tubes, 1 or 2 puppets per semester

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02

7 What should be the use for each box?

Blue box for Non-biodegradable and Green box for Bio-degradable are used.

8 Do you use recycled paper in College?

NA

9 Is there any waste wealth program practiced in the college?

Yes. 1) Vermi compost is the natural manure to plants inspite of artificial manure. 2) Waste water from RO plant is again pumped to water tanks for reuse which reduces the electricity bill and pumping ground water.

10 Approx. Bio degradable Non-Bio degradable Hazardous Others < 1 kg. 2-10 kg. > 10 kg.

Approx. Bio degradable waste is < 3kg and Non-Bio degradable waste is < 2.5 kg.

11 How would you spread the message of recycling to others in thecommunity? Have you taken any initiatives? If yes, please specify.

Conveying through students by conducting meetings.

12 Can you achieve zero garbage in your college?

No

## 10. AUDITING FOR GREEN CAMPUS MANAGEMENT

1. Is there a garden in your college? Area?

   **Yes, 1423 sq. feet (0.032 acres)**

2. Do students spend time in the garden?

   **Yes**

3. List the plants in the garden, with approx. numbers of each species.

   **Given in separate list (annexure-2)**

4. Suggest plants for your campus. (Trees, vegetables, herbs, etc.)

   **Herbs, Shrubs, Trees, Ornamental, Avenue and Medicinal plants are present. Details to be given separate in sheets**

5. List the species planted by the students, with numbers.

   **Given in separate list (annexure-2)**

6. Whether you have displayed scientific names of the trees in the campus?

   **Yes, in the form of sign boards and Q.R. codes.**

7. Are there any plantations in your campus? If yes specify area and type of plantation.

   **Given in separate list (annexure-2)**

8. Is there any vegetable garden in your college? If yes how much area?

   **No**

9. Is there any medicinal garden in your college? If yes how much area?

   **Yes, 600 sq. feet**

10. What are the vegetables cultivated in your vegetable garden? (Mention the quantity of harvest in each season)

    **No**

11. How much water is used in the vegetable garden and other gardens? (Mention the source and quantity of water used).

    **No**

12. Who is in charge of gardens in your college?

    **S. Veeraiah, Asst. Professor of Botany.**

13. Are you using any type of recycled water in your garden?

    **No**

14. List the name and quantity of pesticides and fertilizers used in your

gardens?

**Certain times organic fertilizers supply to the medicinal herbs and shrubs plants.**

15. Whether you are doing organic farming in your college? How?

**No**

16. Do you have any composting pit in your college? If yes, what are you doing with the compost generated?

**Yes, vermi compost generating through earth warms, vermi - composting can also be applied for treatment of sewage.**

17. What are you doing with the vegetables harvested? Do you have any student market?

**No**

18. Is there any botanical garden in your campus? If yes give the details of campus flora.

**Yes, given in separate list (annexure-2)**

19. Give the number and names of the medicinal plants in your college campus.

**Given in separate list (annexure-2)**

20. Any threatened plant species planted/conserved?

**Yes, given in separate list (annexure-2)**

21. Is there a nature club in your college? If yes, what are their activities?

**Yes, we have been maintaining Eco-club, activities details given in separate list (annexure-2).**

22. Is there any arboretum in your college? If yes details of the trees planted.

**No**

23. Are there any fruit yielding plants in your college? If yes details of the trees planted.

**Yes, Given in separate list (annexure-2)**

24. Are there any groves in your college? If yes, give the details of the trees planted.

**No**

25. Is there any irrigation system in your college?

**No**

26. What is the type of vegetation in the surrounding area of the college?

**Many plants were planted by Telangana ku Harithaharam programme. Ex: Neredu, Neem, lemen, etc.**

27. What is the nature awareness programmes conducted in the campus?

**World Wild Day, World Environment day, Ozone day, etc**

28. What is the involvement of students in the green cover maintenance?

**Details given in separate list (annexure-2)**

29. What is the total area of the campus under tree cover? Or under tree canopy?

**1423 sq. feet**

30. Share your IDEAS for further improvement of green cover.

**Try to establish "Miyawaki Method of Plantation" in college premises.**

**Note:** Some data is provided in **Annexure-2**

## 11. AUDITING FOR CARBON FOOTPRINT

1. What is the total strength of students and teachers in your College?

| | | |
|---|---|---|
| 1. Strength of teachers | Gents | 33 |
| | Ladies | 26 |
| 2.Strength of non-teaching staff | Gents | 08 |
| | Ladies | 20 |
| 3. Strength of students | Gents | nil |
| | Ladies | 2475 |
| Total Strength in the college (1+2+3) | | **2562** |

2. Total Number of vehicles used by the stakeholders of the college. (per day)

   62

3. No. of cycles used.

   12

4. No. of two wheelers used (average distance travelled and quantity of fuel and amount used per day)

   45

5. No. of cars used (average distance travelled and quantity of fuel and amount used per day)

   05

6. No. persons using common (public) transportation (average distance travelled and quantity of fuel and amount used per day)

   500

7. No. of persons using college conveyance by the students, non-teaching staff and teachers (average distance travelled and quantity of fuel and amount used per day) - NA

8. Number of parent-teacher meetings in a year? Parents turned up (approx.) - 01

9. Number of visitors with vehicles per day?

More in number during the time of admission and paying examination fee around 150. In Normal days, number is around 45.

10. Number of generators used per day (hours). Give the amount of fuel used per day. – NA
11. Number of LPG cylinders used in the canteen (Give the amount of fuel used per day and amount spent). - 00
12. Quantity of kerosene used in the canteen/labs (Give the amount of fuel used per day and amount spent). – 00
13. Amount of taxi/auto charges paid and the amount of fuel used per month for the transportation of vegetables and other materials to canteen. - 00
14. Amount of taxi/auto charges paid per month for the transportation of office goods to the college.
    Rs. 1500/-
15. Average amount of taxi/auto charges paid per month by the stakeholders of the college.
    To travel inside the campus of college, the above said amount is zero. Because, our college is situated at beside the main road and very near to centre of the town.
16. Use of any other fossil fuels in the college (Give the amount of fuel used per day and amount spent).
    No fossil fuel used other than those covered (petrol/diesel) in above questions.
17. Suggest the methods to reduce the quantity of use of fuel used by the Stakeholders/students/teachers/non-teaching staff of the college.
    As our campus is very small and near to the road, stake holders do not use vehicles inside the campus.
18. Are the Rooms in Campus are Well Ventilated?
    Yes
19. Is the Window to Floor ratio of the rooms Good/Not Enough?
    Good

## $CO_2$ emissions due to Electricity:

Usage of 1 Unit (kWh) of Electrical Energy releases **0.8 Kg** of $CO_2$ into atmosphere.

Based on the above Data we compute the CO2 emissions which are being released in to the atmosphere by the College due to its Day to Day operations. According the data given in **Annexure-1**, below calculation is done.

**Month wise $CO_2$ Emissions:**

| S. No. | Month-Year | Total Units / month (kWh) | CO2 emissions, MT |
|---|---|---|---|
| 1 | Feb-19 | 2143 | 1.71 |
| 2 | Mar-19 | 3099 | 2.48 |
| 3 | Apr-19 | 3111 | 2.49 |
| 4 | May-19 | 4035 | 3.23 |
| 5 | Jun-19 | 2789 | 2.23 |
| 6 | Jul-19 | 2617 | 2.09 |
| 7 | Aug-19 | 3225 | 2.58 |
| 8 | Sep-19 | 2993 | 2.39 |
| 9 | Oct-19 | 1685 | 1.35 |
| 10 | Nov-19 | 3159 | 2.53 |
| 11 | Dec-19 | 1891 | 1.51 |
| 12 | Jan-20 | 1560 | 1.25 |
| | | **32307** | **25.84** |

| S. No. | Value | $CO_2$ emissions/month (MT) |
|---|---|---|
| 1 | Maximum | 3.23 |
| 2 | Minimum | 1.25 |
| 3 | Average | 2.15 |

**$CO_2$ Emersion Reduction per year in the College Campus:**
(As per the data given in Annexure-2)

| Age of Tree | No. of Trees | CO2 Sequestering per tree | Total CO2 Sequestered | CO2 Reduction in Tones |
|---|---|---|---|---|
| Below 5 years | 77 | 7 lbs per year | 539 | 0.269 |
| 5 – 10 years | 72 | 26 lbs per year | 1872 | 0.936 |
| 10 – 20 years | 100 | 48 lbs per year | 4800 | 2.4 |
| Above 50 years | - | 168 lbs per year | - | - |
| Above 100 years | - | 180 lbs per year | - | - |
| TOTAL | 249 | | 7211 | **3.605** |

**CONCLUSION:**

Carbon sequestering capabilities of a tree depends on the type of the tree and age of such tree. There are totally **249** trees in college premises. Considering their varied age factors and type of tree, they grouped under 5 categories and weighted average of Carbon sequestering per tree in each group were determined. Above analysis indicates that a total of **3.605** Tons of Carbon dioxide was sequestered on Annual basis.

## Faunal diversity in college campus (with Photographic evidence)

| Faunal group | Scientific name | Number (If enumeration is done) | Seasonality |
|---|---|---|---|
| Spiders | 1. *Pholcus phalangiodes* | | Throughout the year |
| Moths & butterflies | Butterflies | | Monsoon season |
| | 1.*Acraea violae* | | |
| | 2.*Graphium donson* | | |
| Other insects: (Dragon Flies, Bees, Wasps, Bugs, and Beetles etc..) | Dragon Flies | | Post-monsoon |
| | 1 .*Orthetrum Sabina* | | |
| | 2. *Rhyothemis variegata* | | |
| | 3. *Acisoma panorpoides* | | |
| | Bees- *Apis mellifera* | | |
| | Bugs - Pyrrhocoris apterus | | |
| Annelids | Earth worm | | Rainy season |
| | *1.Pheritima postuma* | | |
| Other Arthropods | House fly-*Musca domestica* | | Throughout the year |
| | Cockroach-*Periplanata Americana* | | |
| | Mosquito-*Anopheles* | | |
| | *Grasshopper -Omocestus viridulus* | | |
| | *Lasius niger-Black ant* | | |
| Amphibians | Frogs | | Throughout the year |
| | 1.*Rana tigrina* | | |
| | 2. *Bufo stomaticus* | | |
| Reptiles | House Lizard- *Hemidactylus frenatus* | | Throughout the year |
| | *Calotes versicolor* | | |
| Birds | Sparrow- *Passer domesticus* | | Throughout the year |
| | House Crow- *Corvus splendens* | | |
| | Asian koel- *Eudynamys scolopaceus* | | |
| | | | |
| Mammals | *Funambulus palmarum* | | Throughout the year |
| | *Bandicota bengalensis* | | |
| | *Mus musculus* | | |
| Any other (specify) | | | |



Govt. Degree College (W)
NALGONDA-508001. T.S.

**Note:** 1) Photographic evidences are given in separate list i.e. Annexure – 3
2) Enumeration is not done due to their random movements

# GOVERNMENT DEGREE COLLEGE FOR WOMEN, NALGONDA

## ENERGY AUDIT

### Annexure - 1

| S. No. | Electrical appliance | Number | Power(W)/ unit | Total power (W) | in (kW) | Operation hours/day | kWh | No. of days in a month | Total consumption per month (kWh) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Florescent tubes | 181 | 36 | 6516 | 6.516 | 2 | 13.032 | 23 | 299.736 |
| 2 | CFL bulbs | 11 | 11 | 121 | 0.121 | 2 | 0.242 | 23 | 5.566 |
| 3 | LED tubes | 60 | 20 | 1200 | 1.2 | 2 | 2.4 | 23 | 55.2 |
| 4 | LED bulbs | 74 | 12 | 888 | 0.888 | 2 | 1.776 | 8 | 14.208 |
| 5 | Fans | 198 | 60 | 11880 | 11.88 | 2 | 23.76 | 23 | 546.48 |
| 6 | Electric motor -1 | 1 | 746 | 746 | 0.746 | 1 | 0.746 | 23 | 17.158 |
| 7 | Electric motor -2 | 1 | 746 | 746 | 0.746 | 1 | 0.746 | 23 | 17.158 |
| 8 | Computers | 155 | 80 | 12400 | 12.4 | 3 | 37.2 | 18 | 669.6 |
| 9 | Printers | 21 | 150 | 3150 | 3.15 | 0.5 | 1.575 | 12 | 18.9 |
| 10 | UPS | 3 | 6000 | 18000 | 18 | 1 | 18 | 23 | 414 |
| 11 | Projector | 5 | 150 | 750 | 0.75 | 3 | 2.25 | 12 | 27 |
| 12 | Photocopier | 1 | 2525 | 2525 | 2.525 | 0.5 | 1.2625 | 5 | 6.3125 |
| 13 | Refrigerator | 3 | 120 | 360 | 0.36 | 8 | 2.88 | 30 | 86.4 |
| 14 | Lab with electricity | 6 | 60 | 360 | 0.36 | 4 | 1.44 | 23 | 33.12 |
| 15 | Scanners | 3 | 50 | 150 | 0.15 | 0.5 | 0.075 | 12 | 0.9 |
| 16 | AC | 2 | 1500 | 3000 | 3 | 1 | 3 | 12 | 36 |
| 17 | Biometric machines | 16 | 20 | 320 | 0.32 | 10 | 3.2 | 23 | 73.6 |
| 18 | CC camera | 22 | 5 | 110 | 0.11 | 24 | 2.64 | 30 | 79.2 |
| 19 | CC camera - DVR | 1 | 40 | 40 | 0.04 | 24 | 0.96 | 30 | 28.8 |
| 20 | LED TV | 1 | 60 | 60 | 0.06 | 1 | 0.06 | 23 | 1.38 |
| 21 | NAPKIN INCINERATOR | 1 | 600 | 600 | 0.6 | 0.5 | 0.3 | 23 | 6.9 |
| 22 | NAPKIN INCINERATOR | 2 | 1200 | 2400 | 2.4 | 1 | 2.4 | 23 | 55.2 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 23 | Street lights | 4 | 50 | 200 | 0.2 | 1 | 0.2 | 12 | 2.4 |
| 24 | Exast Fans | 7 | 32 | 224 | 0.224 | 1 | 0.224 | 23 | 5.152 |
| 26 | Oven | 1 | 1500 | 1500 | 1.5 | 1 | 1.5 | 15 | 22.5 |
| 27 | water bath | 1 | 1500 | 1500 | 1.5 | 1 | 1.5 | 12 | 18 |
| 28 | COLONY COUNTER | 1 | 20 | 20 | 0.02 | 2 | 0.04 | 12 | 0.48 |
| 30 | CENTRIFUGE | 1 | 850 | 850 | 0.85 | 2 | 1.7 | 15 | 25.5 |
| 31 | Incubator | 1 | 40 | 40 | 0.04 | 2 | 0.08 | 12 | 0.96 |
| 32 | Laminar flow | 1 | 600 | 600 | 0.6 | 2 | 1.2 | 12 | 14.4 |
| 33 | CC camera | 22 | 5 | 110 | 0.11 | 24 | 2.64 | 30 | 79.2 |
| 34 | CC camera - DVR | 1 | 40 | 40 | 0.04 | 24 | 0.96 | 30 | 28.8 |
| | | | | | | | | | **2690.2105** |

Head of the Physics Department,
Nagarjuna Government College
(Autonomous), Nalgonda. (A.P.)

Department of Physics
Govt. Degree College (Women)
Nalgonda - 508001, T.S.

# GOVT DEGREE COLLEGE FOE WOMEN, NALGONDA

## Details of Energy Consumption - electricity bills.

| S. No. | Month-Year | No. of Units (kWh) Service No. 0201452964 | No. of Units (kWh) Service No. 0201401748 | No. of Units (kWh) Service No. 0201436224 | Total Units/month (kWh) | Amount Paid (Rs.) Service No. 0201452964 | Amount Paid (Rs.) Service No. 0201401748 | Amount Paid (Rs.) Service No. 0201436224 | Total Amount/ month (Rs.) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Feb-19 | 1314 | 198 | 631 | 2143 | 10256 | 1772 | 4959 | 16987 |
| 2 | Mar-19 | 1978 | 336 | 785 | 3099 | 15143 | 2788 | 6093 | 24024 |
| 3 | Apr-19 | 1554 | 491 | 1066 | 3111 | 12173 | 3929 | 8161 | 24263 |
| 4 | May-19 | 2268 | 405 | 1362 | 4035 | 17624 | 3329 | 10417 | 31370 |
| 5 | Jun-19 | 2124 | 306 | 359 | 2789 | 16369 | 2567 | 2957 | 21893 |
| 6 | Jul-19 | 1327 | 179 | 1111 | 2617 | 10502 | 1633 | 8492 | 20627 |
| 7 | Aug-19 | 1910 | 429 | 886 | 3225 | 14793 | 3323 | 6686 | 24802 |
| 8 | Sep-19 | 1726 | 355 | 912 | 2993 | 13439 | 2778 | 7027 | 23244 |
| 9 | Oct-19 | 1243 | 442 | 0 | 1685 | 9884 | 3418 | 315 | 13617 |
| 10 | Nov-19 | 1457 | 367 | 1335 | 3159 | 11459 | 2866 | 9991 | 24316 |
| 11 | Dec-19 | 903 | 518 | 470 | 1891 | 7381 | 3978 | 3624 | 14983 |
| 12 | Jan-20 | 742 | 181 | 637 | 1560 | 6046 | 1497 | 4853 | 12396 |
| | | | | Total | 32307 | | | Total | 252522 |

Average no. of units per month 2692.25 (kWh) Average amount paid per 21043.5

Head of the Physics Department, Rajarshi Government College (Autonomous), Nalgonda (A.P.)

Head
Department of Physics
Govt. Degree College (Women)
Nalgonda - 508001, T.S.

SOUTHERN POWER DISTRIBUTION COMPANY OF TS LIMITED
ENERGY BILLING SYSTEM, ERO: 901 NALGONDA
CONSUMPTION, BILLING, COLLECTION AND ARREARS HISTORY
DURING THE PERIOD January, 2019 TO February, 2020

| | | | |
|---|---|---|---|
| Service Number | : 0201436224 | | |
| Name | : GOVT.DEGREE COLLEGE FOR | Last Pay Date | : 21-AUG-20 |
| Address | : WOMENS RAMAGIRI,NALGONDA-II | Section Code | : 02 |
| | NALGONDA TOWN-II. | Area Code | : 40101A |
| | | Category | : 7 |
| Consumer Type | -0 | Sup.Con.Date | : 05-DEC-07 |
| Contr / Conn Load | : HV | | |
| Multiplying Factor | : 5.00 / 5.00 | Meter Number | : 20132129 |
| | : 1.00 | Security Deposit: | 10738.00 |
| | | Meter Phase | : 3 |

| MON/YEAR | ST | CLOSING READING | UNITS (kWh) | DEMAND (Rs.) | JE DEBIT (Rs.) | COLLECTION (Rs.) | JE CREDIT (Rs.) | ARREARS |
|---|---|---|---|---|---|---|---|---|
| Jan/2020 | 01 | 14112 | 637 | 4853.00 | 0.00 | 4853.00 | 0.00 | 0.00 |
| Dec/2019 | 01 | 13475 | 470 | 3624.00 | 0.00 | 3624.00 | 0.00 | 0.00 |
| Nov/2019 | 01 | 13005 | 1335 | 9991.00 | 0.00 | 9991.00 | 0.00 | 0.00 |
| Oct/2019 | 03 | 11670 | 0 | 315.00 | 0.00 | 315.00 | 0.00 | 0.00 |
| Sep/2019 | 01 | 11670 | 912 | 7027.00 | 0.00 | 7027.00 | 0.00 | 0.00 |
| Aug/2019 | 01 | 10758 | 886 | 6686.00 | 0.00 | 6686.00 | 0.00 | 0.00 |
| Jul/2019 | 01 | 9872 | 1111 | 8492.00 | 0.00 | 8492.00 | 0.00 | 0.00 |
| Jun/2019 | 01 | 8761 | 359 | 2957.00 | 0.00 | 2957.00 | 0.00 | 0.00 |
| May/2019 | 01 | 8402 | 1362 | 10417.10 | 0.00 | 9710.00 | 0.00 | 0.00 |
| Apr/2019 | 01 | 7040 | 1066 | 8161.00 | 0.00 | 14254.00 | 707.10 | 0.00 |
| Mar/2019 | 01 | 5974 | 785 | 6093.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Feb/2019 | 01 | 5189 | 631 | 4959.00 | 0.00 | 4959.00 | 0.00 | 6093.00 |
| Jan/2019 | 01 | 4558 | 539 | 4282.00 | 0.00 | 4282.00 | 0.00 | 0.00 |

Asst. Accounts Officer
E.R.O / C P D.C.L.,
NALGONDA.



2020/10/5 12:12

SOUTHERN POWER DISTRIBUTION COMPANY OF TS LIMITED
ENERGY BILLING SYSTEM, ERO: 901 NALGONDA
CONSUMPTION, BILLING, COLLECTION AND ARREARS HISTORY
DURING THE PERIOD January, 2019 TO February, 2020

| | | | |
|---|---|---|---|
| Service Number | : 0201401748 | Last Pay Date | : 21-AUG-20 |
| Name | : PRINCIPAL,WOMENS DEGREE | Section Code | : 02 |
| Address | : COLLEGE,RAMAGIRI, | Area Code | : 40101A |
| | NALGOND-TOWN-11 | Category | : 7 |
| | LOC:RGR 12/1 | Sup.Con.Date | : 25-MAY-99 |
| | -0 | | |
| Consumer Type | : HV | Meter Number | : |
| Contr / Conn Load | : 5.00 / 5.00 | Security Deposit: | 0.00 |
| Multiplying Factor | : 1.00 | Meter Phase | : 3 |

| MON/YEAR | ST | CLOSING READING | UNITS (kWh) | DEMAND (Rs.) | JE DEBIT (Rs.) | COLLECTION (Rs.) | JE CREDIT (Rs.) | ARREARS |
|---|---|---|---|---|---|---|---|---|
| Jan/2020 | 01 | 6592 | 181 | 1497.00 | 0.00 | 0.00 | 0.00 | -15997.00 |
| Dec/2019 | 01 | 6411 | 518 | 3978.00 | 0.00 | 16844.00 | 7494.00 | -17494.00 |
| Nov/2019 | 01 | 5893 | 367 | 2866.00 | 7494.00 | 0.00 | 0.00 | 2866.00 |
| Oct/2019 | 01 | 5526 | 442 | 3418.00 | 0.00 | 3418.00 | 0.00 | -7494.00 |
| Sep/2019 | 01 | 5084 | 355 | 2778.00 | 0.00 | 2778.00 | 0.00 | -7494.00 |
| Aug/2019 | 01 | 4729 | 429 | 3323.00 | 0.00 | 3323.00 | 0.00 | -7494.00 |
| Jul/2019 | 01 | 4300 | 179 | 1633.00 | 0.00 | 1633.00 | 7494.00 | -7494.00 |
| Jun/2019 | 01 | 4121 | 306 | 2567.00 | 0.00 | 2567.00 | 0.00 | 0.00 |
| May/2019 | 01 | 3815 | 405 | 3329.94 | 0.00 | 2343.00 | 986.94 | 0.00 |
| Apr/2019 | 01 | 3410 | 491 | 3929.00 | 0.00 | 6717.00 | 0.00 | 0.00 |
| Mar/2019 | 01 | 2919 | 336 | 2788.00 | 0.00 | 0.00 | 0.00 | 2788.00 |
| Feb/2019 | 01 | 2583 | 198 | 1772.00 | 0.00 | 1772.00 | 0.00 | 0.00 |
| Jan/2019 | 01 | 2385 | 154 | 1449.00 | 0.00 | 1449.00 | 0.00 | 0.00 |

Asst. Accounts Officer
E.R.O. / C P D.C.L.,
NALGONDA

SOUTHERN POWER DISTRIBUTION COMPANY OF TS LIMITED
ENERGY BILLING SYSTEM, ERO: 901 NALGONDA
CONSUMPTION, BILLING, COLLECTION AND ARREARS HISTORY
DURING THE PERIOD January, 2019 TO February, 2020

| | | | |
|---|---|---|---|
| Service Number | : 0201452964 | Last Pay Date | : 30-SEP-20 |
| Name | : GOVT DEGREE COLLEGE | Section Code | : 02 |
| Address | : SS-11 | Area Code | : 40101A |
| | RGR-12/1 | Category | : 7 |
| | RAMAGIRI | Sup.Con.Date | : 26-NOV-14 |
| | NALGONDA-508001 | | |
| Consumer Type | : HV | Meter Number | : 653894 |
| Contr / Conn Load | : 25.00 / 25.00 | Security Deposit: | 36688.00 |
| Multiplying Factor | : 1.00 | Meter Phase | : 3 |

| MON/YEAR | ST | CLOSING READING | UNITS (kWh) | DEMAND (Rs.) | JE DEBIT (Rs.) | COLLECTION (Rs.) | JE CREDIT (Rs.) | ARREARS |
|---|---|---|---|---|---|---|---|---|
| Jan/2020 | 01 | 46217 | 742 | 6046.00 | 0.00 | 6046.00 | 0.00 | 0.00 |
| Dec/2019 | 09 | 45475 | 903 | 7381.00 | 0.00 | 7381.00 | 0.00 | 0.00 |
| Nov/2019 | 09 | 44572 | 1457 | 11459.00 | 0.00 | 11459.00 | 0.00 | 0.00 |
| Oct/2019 | 09 | 43115 | 1243 | 9884.00 | 0.00 | 9884.00 | 0.00 | 0.00 |
| Sep/2019 | 09 | 41872 | 1726 | 13439.00 | 0.00 | 13439.00 | 0.00 | 0.00 |
| Aug/2019 | 09 | 40146 | 1910 | 14793.00 | 0.00 | 14793.00 | 0.00 | 0.00 |
| Jul/2019 | 09 | 38236 | 1327 | 10502.00 | 0.00 | 10502.00 | 0.00 | 0.00 |
| Jun/2019 | 09 | 36909 | 2124 | 16369.00 | 0.00 | 16369.00 | 0.00 | 0.00 |
| May/2019 | 09 | 34785 | 2268 | 17624.89 | 0.00 | 15209.00 | 2415.89 | 0.00 |
| Apr/2019 | 09 | 32517 | 1554 | 12173.00 | 0.00 | 27316.00 | 0.00 | 0.00 |
| Mar/2019 | 09 | 30963 | 1978 | 15143.00 | 0.00 | 0.00 | 0.00 | 15143.00 |
| Feb/2019 | 09 | 28985 | 1314 | 10256.00 | 0.00 | 10256.00 | 0.00 | 0.00 |
| Jan/2019 | 09 | 27671 | 1005 | 8132.00 | 0.00 | 8132.00 | 0.00 | 0.00 |

Asst. Accounts Officer
E.R.O / C P D.C L.,
NALGONDA.

# Government Degree College for Women

(Affiliated to Mahathma Gandhi University)

Ramagiri, Nalgonda, T.S - 508 001

Office : 08682-222689/690 E-mail : prl-gdcw-nlg-ce@telangana.gov.in

Website : gdcts.cgg.gov.in/ramagiri.edu E-mail : officegdcw.nlg@gmail.com

*Dr. Ghanshyam*

M.A., M.Phil, Ph.D

Principal


Annexure-2.

# GREEN CAMPUS MANAGEMENT REPORT 2020 - 21

## Members of Green Audit Committee:

| | |
|---|---|
| 1. Dr. Ghanshyam | Principal & Chairman |
| 2. Mr. S. Veeraiah | Coordinator, Asst. Prof. of Botany |
| 3. Smt. A. Sandhya | HOD, Dept. of Botany – N.G college |
| 4. Dr. K. Srinivas Reddy | HOD, Dept.of Botany |
| 5. Smt. G. Saritha | Lecturer in Botany |
| 6. Smt. P. Sunitha | Lecturer in Botany |

## INTRODUCTION :

The term 'green' refers as Eco-friendly of Environment. Green accounting can be defined as systematic identification, recording, reporting and analysis of components of ecological diversity.

A committee has been formed to monitor the proper conservation and plantation of the plants in the campus. As per the suggestions made by IQAC, Botany Department taken the responsibility to do Green Audit with co-operation of Principal and Green Audit Committee.

## METHODOLOGY :

The physical inspection of the campus, review of the relevant documentation and interviews. Other relevant standards, such as ISO ,Green Audit framework etc., were also considered.

## List of the Audited plants in college premises:

| Sl. No | Scientific Name | Local Name | Family | Habit T/S/H /C | Status | Uses | Age(Years) | NOs | Student planted Yes/No |
|---|---|---|---|---|---|---|---|---|---|
| 1 | *Acalypha wilkesiana* | Copper leaf | Euphorbiaceae | S | - | Ornamental | 2 | 6 | Yes |
| 2 | *Agave americana* | కిత్తనార | Asparagaceae | H | En | Fiber | 5 | 1 | Yes |
| 3 | *Albizia lebbeck* | దిరిసెన | Mymosaceae | T | Vu | Timber | 2-5 | 2 | |
| 4 | *Annona reticulata* | రామాఫలం | Annonaceae | T | En | Medicinal, Fruit | 3 | 2 | Yes |
| 5 | *Annona squamosa* | సీతాఫలం | Annonaceae | T | Vu | Medicinai , Fruit | 4 | 2 | Yes |
| 6 | *Anthocephalus scadambha* | కధంభవృ | Rubiaceae | T | En | Timber | 3 | 2 | Yes |

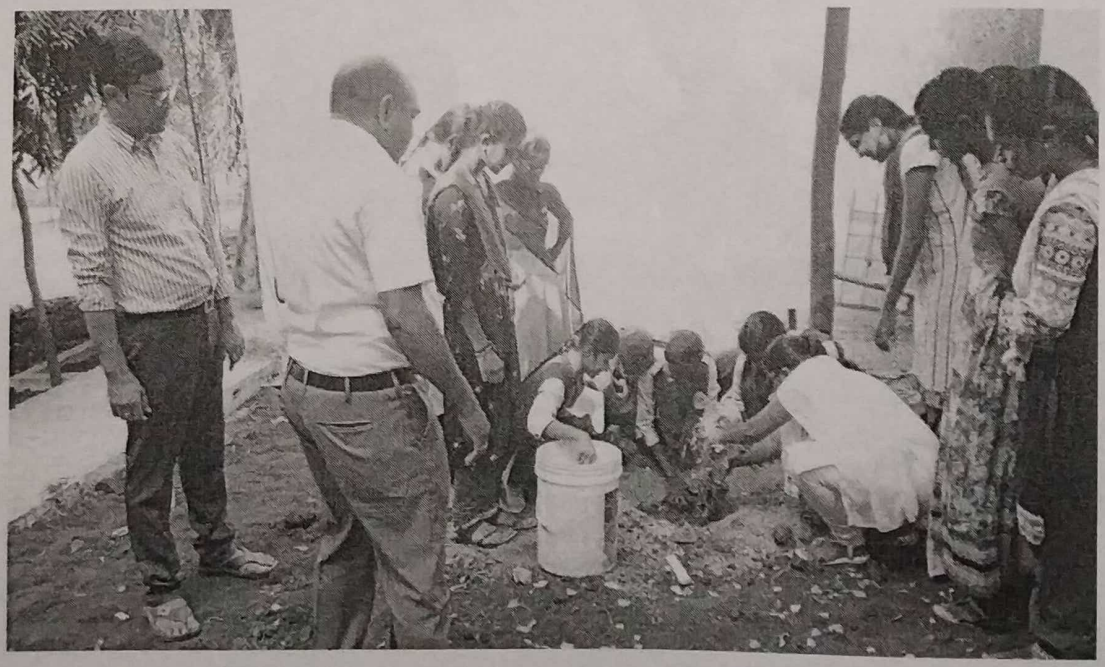
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | క్షం | | | | | | | |
| 7 | *Antigononleptopus* | బఠానిపూలు | Polygonaceae | C | Vu | Ornamental | 5 | 2 | |
| 8 | *Azadricta indica (3 plates)* | వేప | Meliaceae | T | Vu | Medicinal | 5to20 | 17 | |
| 9 | *Camaedorea elegans* | Areca palm | Arecaceae | T | Vu | Ornamental | 2 | 2 | |
| 10 | *Cassia siamea* | సీమతంగేడు | Caesalpiniaceae | T | En | Ornamental | 5 to 7 | 6 | |
| 11 | *Catheranthus roseus* | బిళ్ళగన్నేరు | Apocyanaceae | H | Vu | Medicinal | 3 | 7 | Yes |
| 12 | *Ceiba pentandra* | బురుగుచెట్టు | Bombacaceae | T | En | Ornamental | 2 | 2 | Yes |
| 13 | *Crossandrainfundubulifo rmis* | కనకాంబరాలు | Acanthaceae | H | Vu | Ornamental | 2 | 2 | Yes |
| 14 | *Dalbergia sisso* | Indian Rosewood | Fabaceae | T | En | Timber | 7 | 5 | |
| 15 | *Delonix regia* | తురాయి | Ceasalpiniaceae | T | Vu | Ornamental | 2 to 5 | 2 | Yes |
| 16 | *Duranta repens* | Golden duranta | Verbinacea | S | Vu | Ornamental | 5 | 15 | |
| 17 | *Emblica officinalis* | ఉసిరి | Euphorbiaceae | T | Vu | Medicinal | 2 to 6 | 3 | Yes |
| 18 | *Eucalyptus indica* | నీలగిరి | Myrtaceae | T | Vu | Medicinal | 15 | 1 | |
| 19 | *Euphorbia milii* | Crown of thorns | Euphobiaceae | H | Vu | Ornamental | 2 | 1 | Yes |
| 20 | *Ficus bejamina* | Ficus | Moraceae | T | En | Timber | 10 | 2 | |
| 21 | *Ficus religiosa* | రావిచెట్టు | Moraceae | T | En | Timber | 2 to 5 | 2 | |
| 22 | *Holoptela integrifolia* | నామిల్నార | Ulmaceae | T | En | Timber | 5 | 1 | |
| 23 | *Jasminum multiflorum* | మల్లె | Oleaceae | C | Vu | Ornamental | 2 | 2 | Yes |
| 24 | *Leucaena leucocephala* | సుబాబుల్ | Mymosaceae | T | Vu | Timber | 8 | 10 | Yes |
| 25 | *Mangifera indica* | మామిడి | Anacardiaceae | T | Vu | Medicinal, Fruit | 2 to 4 | 3 | Yes |
| 26 | *Morus alba* | మల్బరి | Moraceae | S | Vu | Feed | 5 | 1 | Yes |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 27 | *Murrayakoenigii* | కరివేపాకు | Rutaceae | T | Vu | Medicinal | 2 to 4 | 3 | Yes |
| 28 | *Nerium odorum* | గన్నేరు | Apocynaceae | S | Vu | Ornamental | 3 to 5 | 3 | Yes |
| 29 | *Oscimum sanctum* | తులసి | Lamiaceae | S | Vu | Medicinal | 4 to 5 | 3 | Yes |
| 30 | *Oscimumbacillicum* | Sabja | Lamiaceae | S | Vu | Medicinal | 2 | 1 | Yes |
| 31 | *Peltophorumpterocarpum* | Peltophorum | Fabaceae | T | Vu | Ornamental | 6 | 2 | |
| 32 | *Polyalthia longifolia* | నరమామిడి | Annonaceae | T | Vu | Ornamental | 2 to 10 | 31 | |
| 33 | *Pongamia pinnata* | కానుగ | fabaceae | T | Vu | Biodiesel | 5 to 12 | 82 | Yes |
| 34 | *Psidium gujuava* | జామ | Myrtaceae | T | Vu | Fruit | 3 | 3 | Yes |
| 35 | *Pterocarpus santalinum* | ఎర్రచందనం | Fabaceae | T | En | Timber | 2 | 2 | Yes |
| 36 | *Punica granatum* | దానిమ్మ | Myrtaceae | S | Vu | Fruit | 2 | 1 | Yes |
| 37 | *Spathodacompanulata* | African Tulip | Bignoniaceae | T | En | Timber | 10 | 1 | Yes |
| 38 | *Sterculia foetida* | అడవిబాదం | Malvaceae | T | En | Timber | 3 to 10 | 3 | |
| 39 | *Tabernaemontana indica* | నందివర్ధనం | Apocynaceae | S | Vu | Ornamental | 2 | 4 | Yes |
| 40 | *Tecoma stans* | Yellow bells | Bignoniceae | S | Vu | Ornamental | 5 | 23 | Yes |
| 41 | *Tectona grandis* | టేకు | verbenaceae | T | Vu | Timber | 4 to 5 | 2 | Yes |
| 42 | *Terminalia arjuna* | తెల్లమద్ది | Combretaceae | T | En | Timber | 3 to 6 | 7 | Yes |
| 43 | *Terminalia bellarica* | థానిచెట్టు | Combretaceae | T | En | Timber | 3 to 5 | 3 | Yes |
| 44 | *Thuja occidentalis* | Easternwhite cedar | Cupressaceae | T | Vu | Medicinal | 6 | 1 | |
| 45 | *Rauwolfia serpentina* | సర్పగంధి | Apocyanaceae | S | En | Medicinal | 2 | 1 | Yes |
| 46 | *Withaniasomnifera* | అశ్వగంధ | Solanaceae | S | En | Medicinal | 2 | 1 | Yes |
| 47 | *Aegle marmelos* | మారేడు | Rutaceae | T | En | Medicinal | 2 to 5 | 3 | Yes |
| 48 | *Centella asiatica* | సరస్వతి ఆకు | Apiaceae | H | Vu | Medicinal | 1 | 1 | Yes |

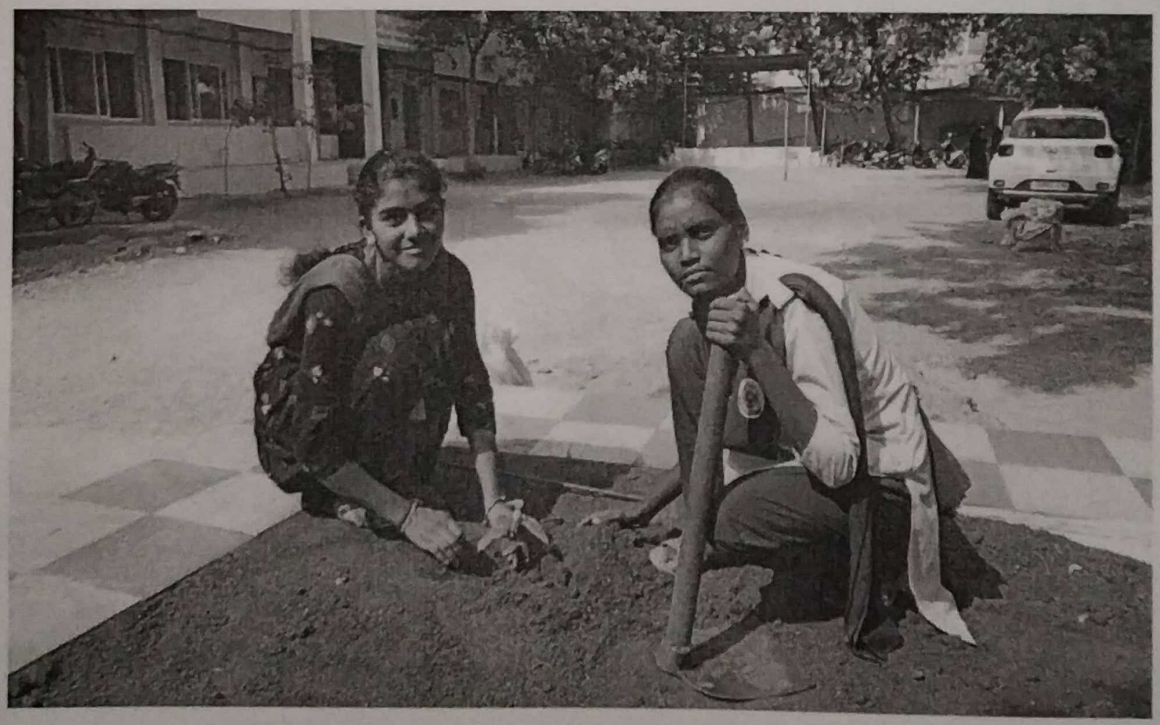
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 49 | *Trachyspermumammi* | వామ ఆకు | Apiaceae | H | Vu | Medicinal | 1 | 1 | Yes |
| 50 | *Nyctanthesarbotristis* | పారిజాతం | Oleaceae | H | Vu | Ornamental | 2 | 2 | Yes |
| 51 | *Tinosporacordifolia* | తిప్పతీగ | Menispermaceae | C | Vu | Medicinal | 2 | 2 | Yes |
| 52 | *Mimusopselengi* | పొగడ | Sapotaceae | T | En | Timber | 10 | 1 | |
| 53 | *Chamaecostuscuspidatus* | Insulin plant | Costaceae | H | En | Medicinal | 2 | 1 | Yes |
| 54 | *Kalanchoepinnata* | రణపాల | Crassulaceae | C | Vu | Medicinal | 2 | 1 | Yes |
| 55 | *Adathodavasica* | అడ్డసరం | Acanthaceae | S | En | Medicinal | 3 | 1 | Yes |
| 56 | *Aloe vera* | అలో వెరా | Lilliaceae | H | Vu | Medicinal | 2 | 2 | Yes |
| 57 | *Conocarpus erectus* | కోనోకార్పస్ | Combretaceae | T | En | Ornamental | 2 | 40 | Yes |
| 58 | Caesalpinia bonduc | Gachakaya | Caesalpiniaceae | H | En | Ornamental | 3 | 1 | Yes |
| 59 | Lawsoniainermis | Goraku, henna | Lythraceae | H | Vu | Medicinal | 4 | 1 | Yes |

# PHOTO GALLERY-1

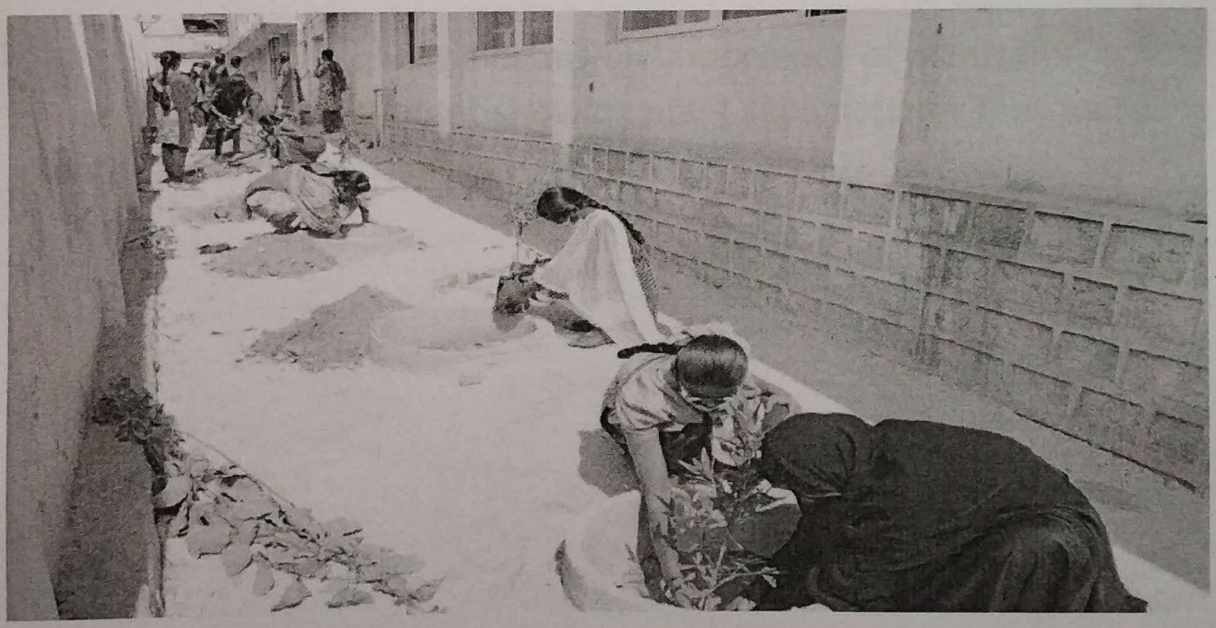
BZC EM – II year students were planted saplings:



Prior preparation for plantation.




BukyaBhavani , BZC EM student planting Pithecellobium dulse (Seema chintha) at Botanical garden



Massive Plantation in college campus


Students are giving slogans on importance of plantation programme, every student showing plant sapling (later they were planted in college premises)

## List of planted saplings in college premises by Students:

| Ornamental Plants | | | | | | |
|---|---|---|---|---|---|---|
| S.no | Scientific name | Common name | Family | Habit | No. of plants | Age in years |
| 1 | *Acalypha wilkesiana* | Copper leaf | Euphorbiaceae | Shrub | 6 | 2 |
| 2 | *Antigonanleptopus* | Batani flowers | Polygonaceae | Climber | 2 | 5 |
| 3 | *Camaedorea elegans* | Areca palm | Arecaceae | Tree | 2 | 2 |
| 4 | *Cassia siamea* | Seema thangedu | Caesalpiniaceae | Tree | 6 | 5 to 7 |
| 5 | *Catheranthus roseus* | Billaganneru | Apocyanaceae | Shrub | 7 | 3 |
| 6 | *Crossandrainfundubuliformis* | kanakambaram | Acanthaceae | Shrub | 2 | 2 |
| 7 | *Duranta repens* | Golden duranta | Verbinacea | Shrub | 15 | 5 |
| 8 | *Euphorbia milii* | Crown of thorns | Euphobiaceae | Shrub | 1 | 2 |
| 9 | *Ficus bejamina* | | Moraceae | Tree | 2 | 10 |
| 10 | *Lilium longiflorum* | White lilly | Liliaceae | Herb | 10 | 5 |
| 11 | *Nerium odorum* | Ganneru | Apocynaceae | Shrub | 3 | 3 to 5 |
| 12 | *Peltophorumpteroc arpum* | Peltophorum | Fabaceae | Tree | 2 | 6 |
| 13 | *Polyalthia longifolia* | naramamidi | Annonaceae | Tree | 31 | 2 to10 |
| 14 | *Spathodacompanulata* | African Tulip | Bignoniaceae | Tree | 1 | 10 |
| 15 | *Tabernaemontana indica* | nandivardhanam | Apocynaceae | Shrub | 4 | 2 |
| 16 | *Tecoma stans* | Suvarna ganneru | Bignoniceae | Tree | 23 | 5 |
| 17 | *Thuja occidentalis* | white cedar | Cupressaceae | Tree | 1 | 6 |
| 18 | *Caesalpinia bonduc* | Gachakaya | Caesalpiniaceae | Herb | 1 | 3 |

| MEDICINAL PLANTS | | | | | | |
|---|---|---|---|---|---|---|
| S.no | Scientific name | Common name | Family | Habit | no. of plants | Age in Years |
| 1 | *Aegle marmelos* | మారేడు | Rutaceae | Tree | 3 | 2 to 6 |
| 2 | *Adathodavasica* | Adda saram | Acanthaceae | Lagre shrub | 1 | 3 |
| 3 | *Aloe barbadensis* | KalabandaAlovera | Liliaceae | Herb | 1 | 2 |
| 4 | *Anthocephaluskadambha* | Kadambha | Rubiaceae | Tree | 3 | 2 |
| 5 | *Azadricta indica* | Vepa/ neem | Meliace | Tree | 17 | 5 to 20 |
| 6 | *Holoptela integrifolia* | namalinara tree | Ulmaceae | Tree | 1 | 5 |
| 7 | *Costusigneus* | Insulin leaf | Costaceae | Herb | 1 | 2 |
| 8 | *Mimusopselengi* | Pogda | Sapotaceae | Tree | 1 | 10 |
| 9 | *Murayakoengii* | Curry leaf | Rutaceae | Tree | 3 | 2 to 4 |
| 10 | *Oscimumbacilicum* | Sabja | Lamiaceae | Shrub | 1 | 2 |
| 11 | *Oscimum sanctum* | Tulsi | Lamiaceae | Shrub | 3 | 4 to 5 |
| 12 | *Terminalia arjuna* | tellamaddi | Combretaceae | Tree | 7 | 3 to 6 |
| 13 | *Terminalia belarica* | Thani | Combretaceae | Tree | 3 | 3 to 5 |
| 14 | *Rauwolfia serpentina* | Sarpagandhi | Apocyanaceae | Shrub | 1 | 2 |
| 15 | *Withaniasomnifera* | Aswagandha | Solanaceae | Shrub | 1 | 2 |
| 16 | *Lawsoniainermis* | Goraku, henna | Lythraceae | Herb | 1 | 4 |
| | | | | | | |
| | | | | | | |

| Avenue / Shady trees | | | | | | |
|---|---|---|---|---|---|---|
| **S.No** | **Scientific name** | **Common name** | **Family** | **Habit** | **No. of plants** | **Age in Years** |
| 1 | *Albizia lebbeck* | Dirisena | Mymosaceae | Tree | 6 | 10 |
| 2 | *Delonix regia* | Gulmohar/erraturai | Ceasalpiniaceae | Tree | 2 | 2 to 5 |
| 3 | *Ficus religiosa* | Ravi/peepal tree | Moraceae | Tree | 2 | 5 & 2 |
| 4 | *Leucaena leucocephala* | subabul | Mymosaceae | Tree | 10 | 8 s |
| 5 | *Millingtonia Hortensis* | Tree | Bignoniaceae | Tree | 3 | 4 to 5 |
| 6 | *Mimusopselengi* | Tree | Sapotaceae | Tree | 1 | 10 |
| 7 | *Peltophorumpterocarpum* | Peltophorum | Fabaceae | Tree | 2 | 6 |
| 8 | *Unidentified tree species* | | | | 5 | 2 to 10 |
| 9 | *Pongamia pinnata* | Kanuga | fabaceae | Tree | 82 | 5 to 12 |

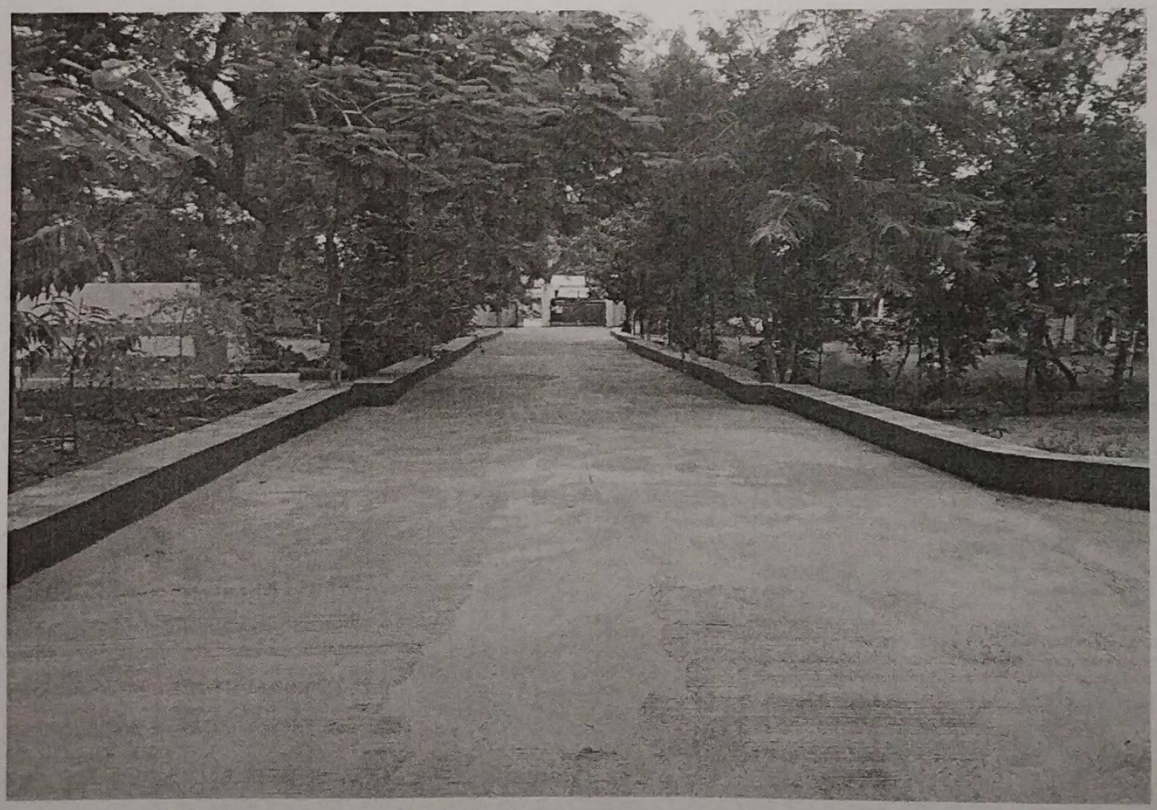
| FRUITYEILDINGPLANTS | | | | | | |
|---|---|---|---|---|---|---|
| S.no | Scientific name | Common name | Family | Habit | No. of plants | Age in Years |
| 1 | *Annona reticulata* | Ramafalam | Annonaceae | Tree | 3 | 2 |
| 2 | *Annona squamosa* | Seetha falam/ Custered apple | Annonaceae | Tree | 4 | 2 |
| 3 | *Emblica officinalis* | Amla | Euphorbiaceae | Tree | 3 | 2 to 6 |
| 4 | *Mangifera indica* | Mamidi/mango | Anacardiaceae | Tree | 3 | 2 to 4 |
| 5 | *Morus alba* | మల్బరి | Moraceae | Shrub | 1 | 5 |
| 6 | *Psidium gujuava* | Jama, Guva | Myrtaceae | Tree | 3 | 3 |
| 7 | *Punica granatum* | Pomegranate | Myrtaceae | Shrub | 1 | 2 |
| 8 | *Sterculia foetida* | Adavibadam/ Soft wood tree | Malvaceae | Tree | 3 | 3 to 10 |

| TIMBER YEILDING TREES | | | | | | |
|---|---|---|---|---|---|---|
| **S.No** | **Scientific name** | **Common Name** | **Family** | **Habit** | **No. of plants** | **Age in Years** |
| 1 | *Azadricta indica* | Vepa/ neem | Meliace | Tree | 17 | 5 to 20 |
| 2 | *Dalbergia sisso* | Indian rosewood | fabaceae | Tree | 5 | 7 |
| 3 | *Eucalyptus indica* | Jamaoil/Neelagiri | Myrtaceae | Tree | 1 | 15 |
| 4 | *Ficus religiosa* | Ravi/peepal tree | Moraceae | Tree | 2 | 2 to 5 |
| 5 | *Leucaena leucocephala* | subabul | Mymosaceae | Tree | 40 | 8 |
| 6 | *Mangifera indica* | Mamidi/mango | Anacardiaceae | Tree | 3 | 2 |
| 7 | *Pterocarpus santalinum* | Red sanders | Fabaceae | Tree | 2 | 2 |
| 8 | *Tectona grandis* | teak | verbenaceae | Tree | 2 | 4 to5 |

# PHOTO GALLERY 2

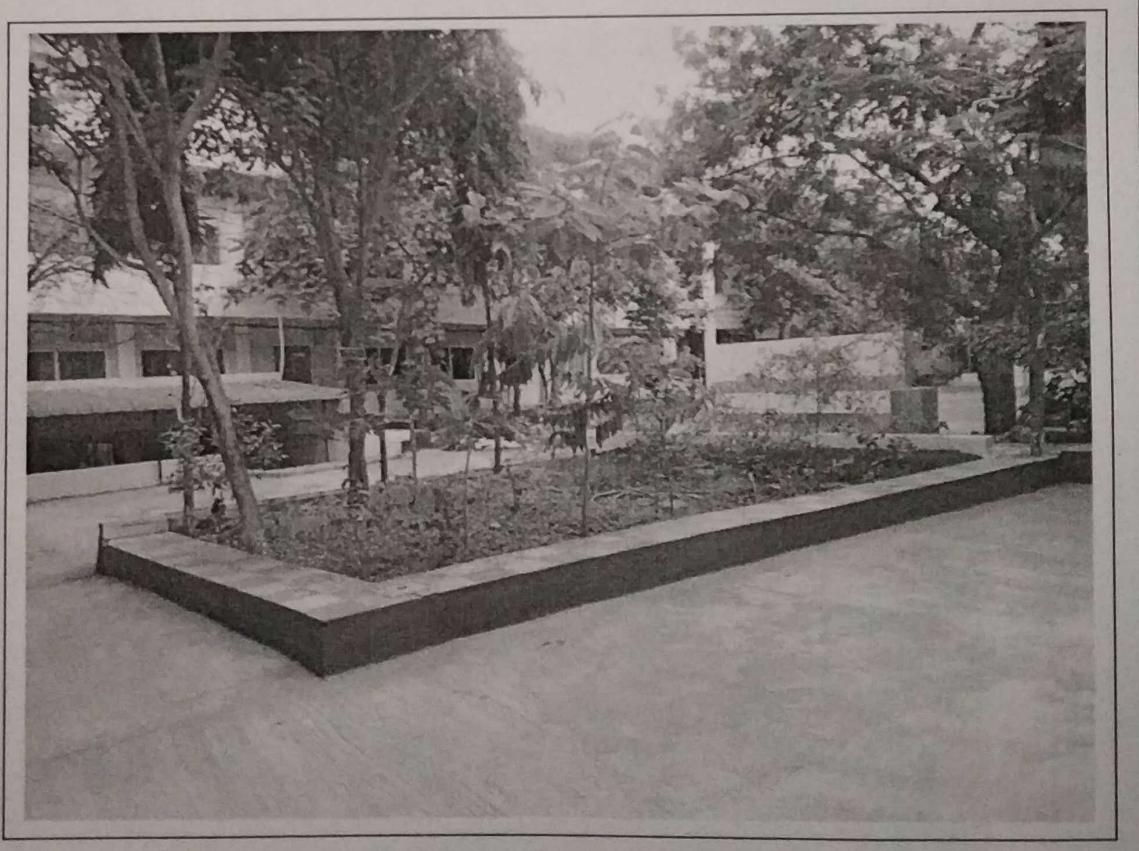
Tree cover at Administrative Block :

Tree coverage around play ground



College Campus Main Road View

Dense tree cover in college premises



Tree coverage among the paths in college premises

Arranging of Quick Response Code ( Q.R Code ) to plant species in college premises , GDCW,Nalgonda staff


Rekha Venkateshwarlu, Asst.Prof. , GDCW-Nalgonda have arranging Q.R. Code on *Pongamia pinnata* , a biodiesel tree plant


**Dr. K. Srinivas Reddy, HOD of Botany , arranging Q.R.Code on *Polyalthia longifolia* (Naramamidi)**

CO2 Emersion Reduction per year in the College Campus

| Age of Tree | No of Trees | CO2 Seqestering per tree | Total CO2 Sequestered | CO2 Reduction in Tones |
|---|---|---|---|---|
| Below 5 years | 77 | 7 lbs per year | 539 | 0.269 |
| 5 – 10 years | 72 | 26 lbs per year | 1872 | 0.936 |
| 10 – 20 years | 100 | 48 lbs per year | 4800 | 2.4 |
| Above 50 years | - | 168 lbs per year | - | - |
| Above 100 years | - | 180 lbs per year | - | - |
| TOTAL | 249 | | 7211 | 3.605 |

**CONCLUSION :**

Carbon sequestering capabilities of a tree depends on the type of the tree and age of such tree.There are totally**249** trees in college premises. Considering their varied age factors and type of tree, they grouped under 5 categories and weighted average of Carbon sequestering per tree in each group were – determined. Above analysis indicates that a total of**3.605**Tons of Carbon dioxide was sequestered on Annual basis.

**Green Audit Coordinator**

**Certified by**

**Smt. A. Sandhya,**

**HOD, Dept. of Botany ,**

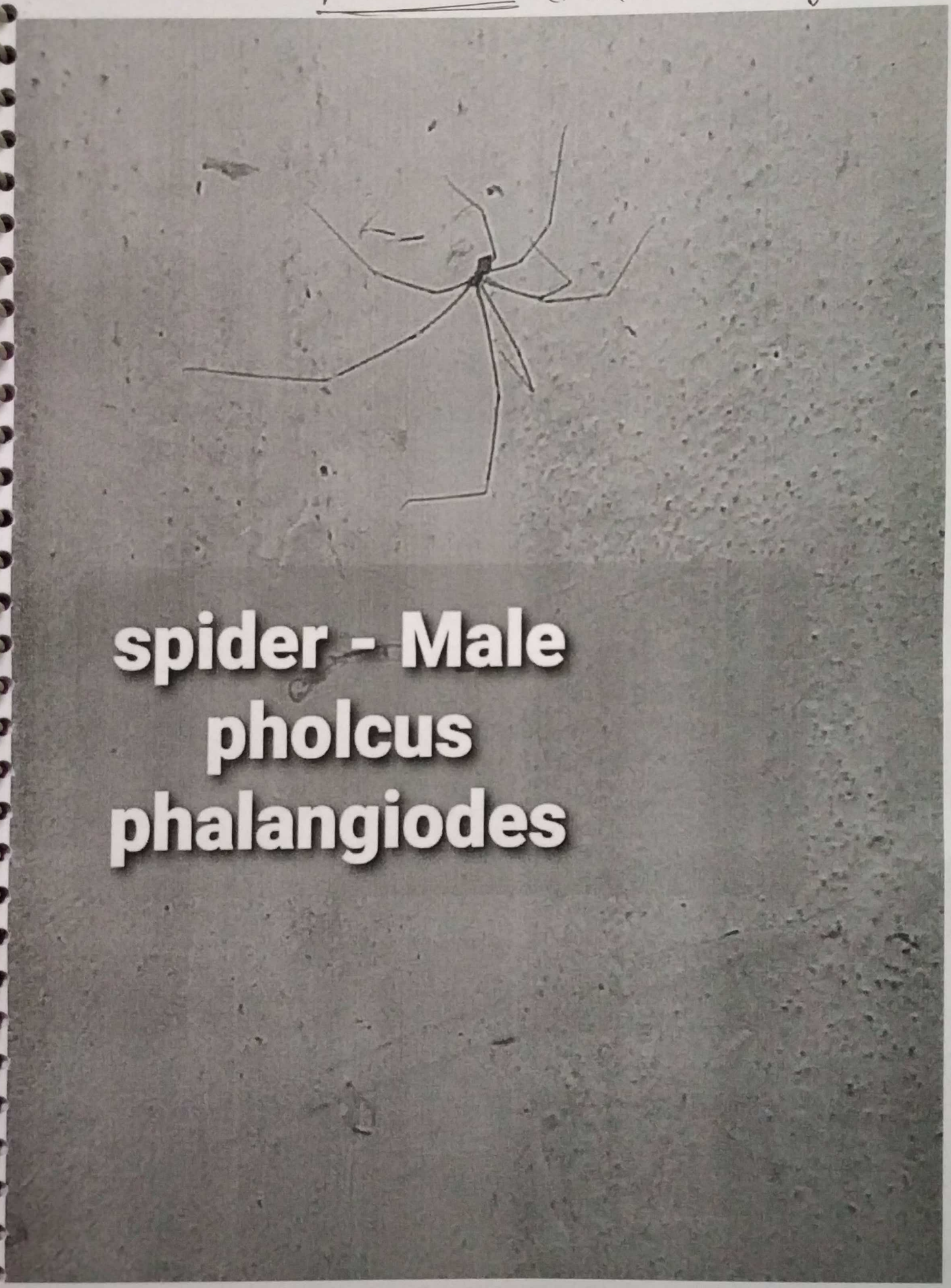
**N.G college,Nalgonda.**

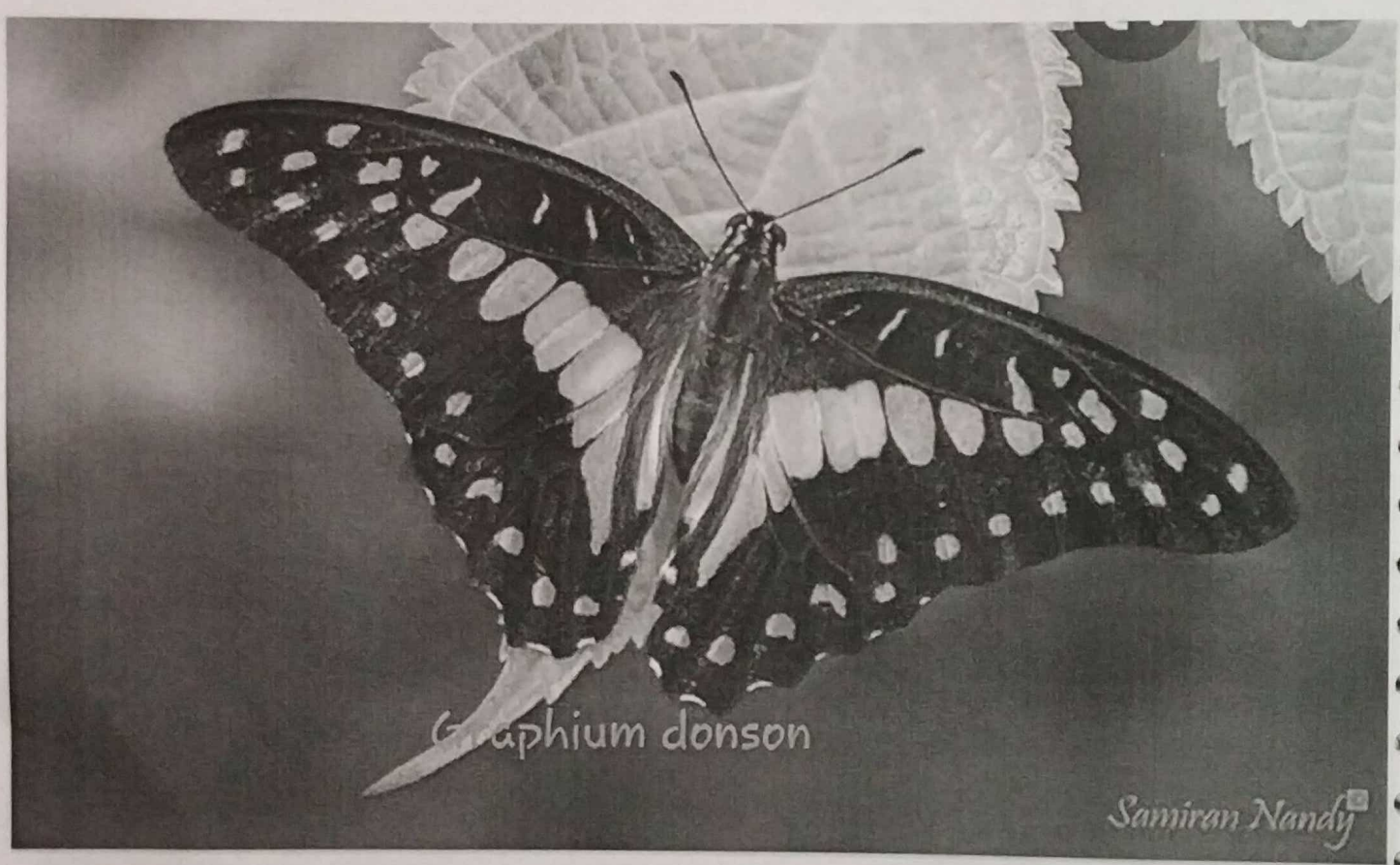
Assistant Professor
Department of Botany
Nagarjuna Government College
N.G. COLLEGE

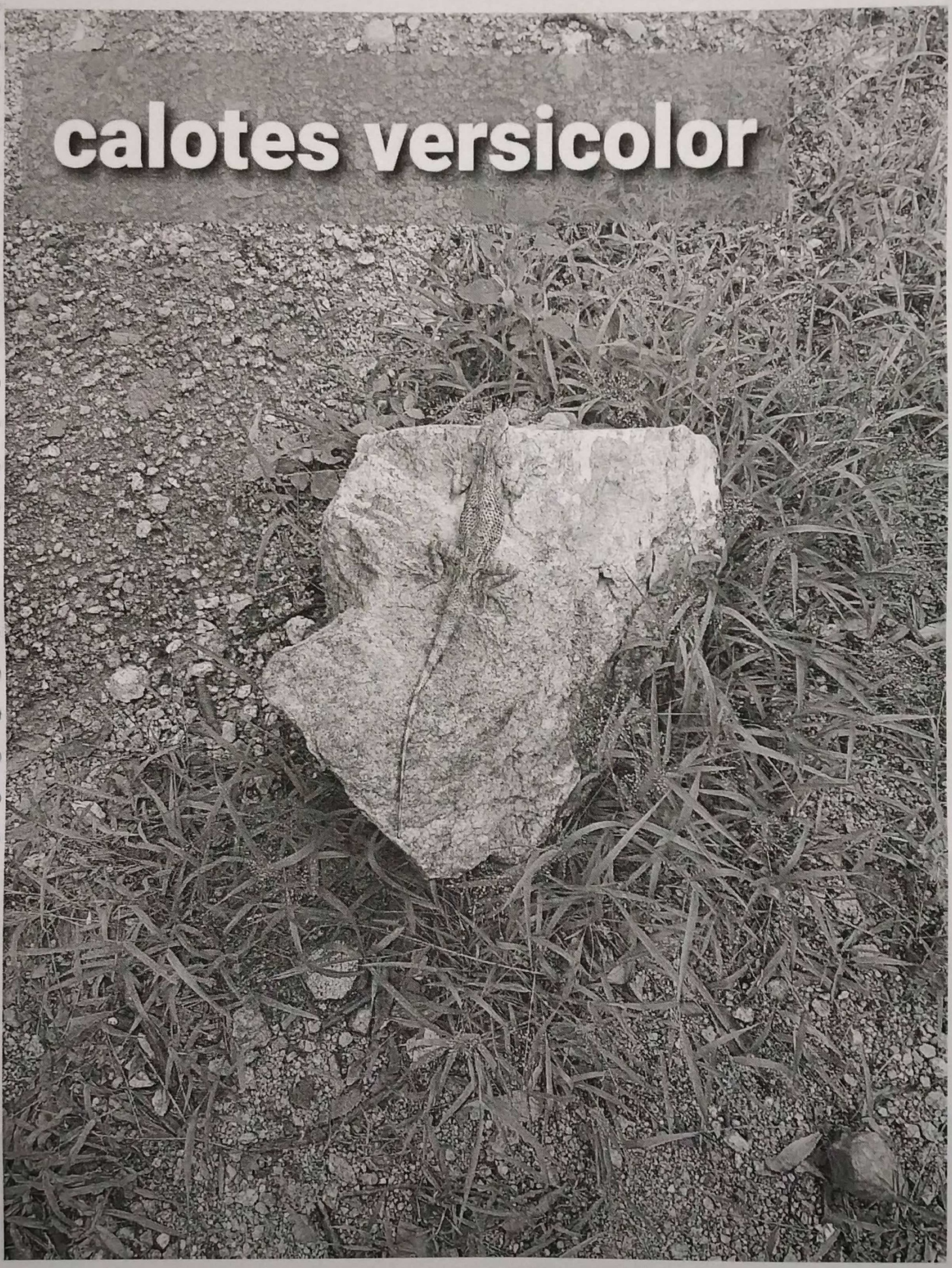
Principal
Govt. Degree College (Women)
Nalgonda - 508001, T.S.

**Principal**

Annexure-3 (Faunal Diversity- Evidences).




Graphium donson
Samiran Nandy


calotes versicolor

## Lizard - Hemidactylus Frenatus

Bufo stomaticus

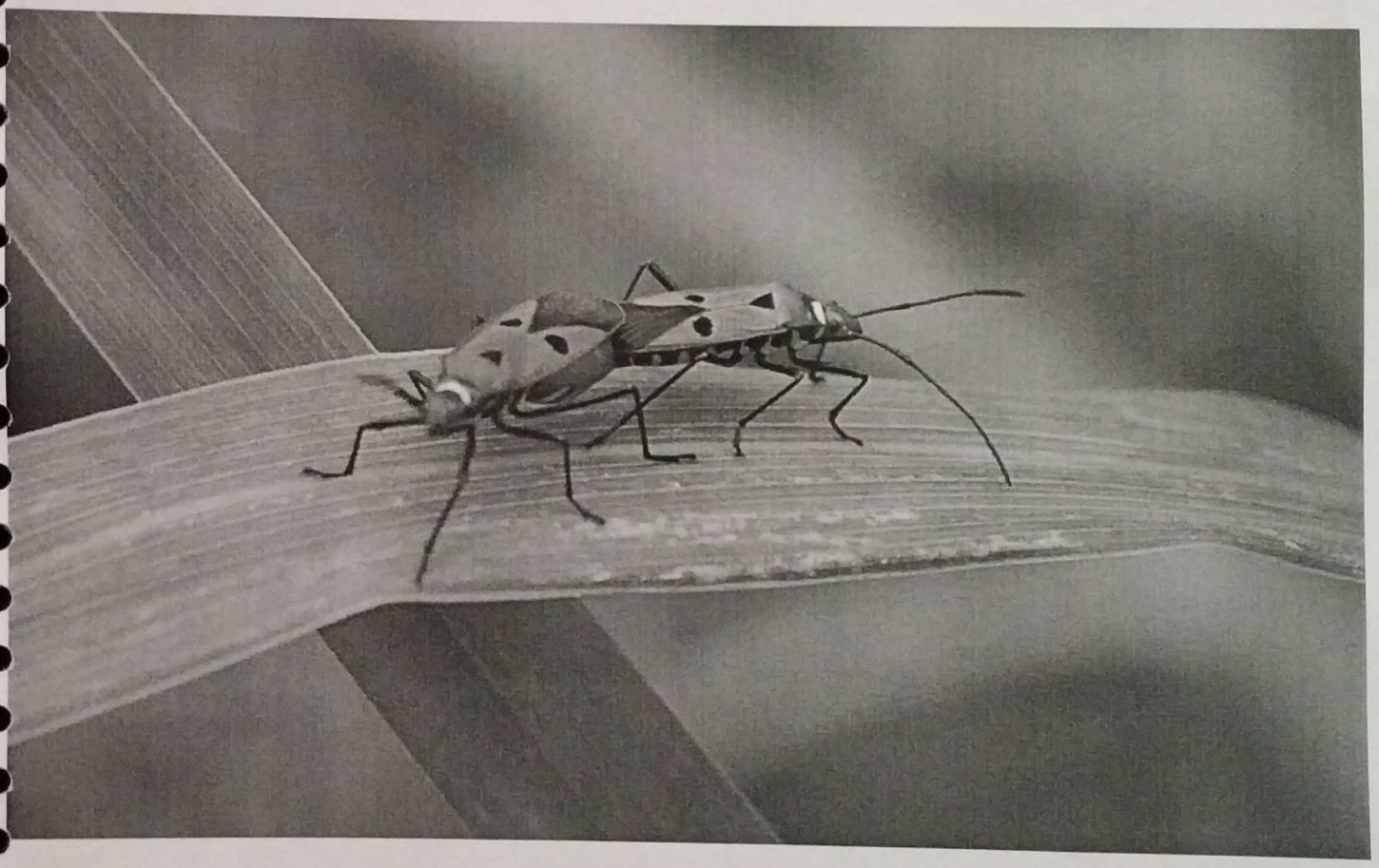

Grasshopper- Omocestus
Viriduius

Black ant - Lasius niger

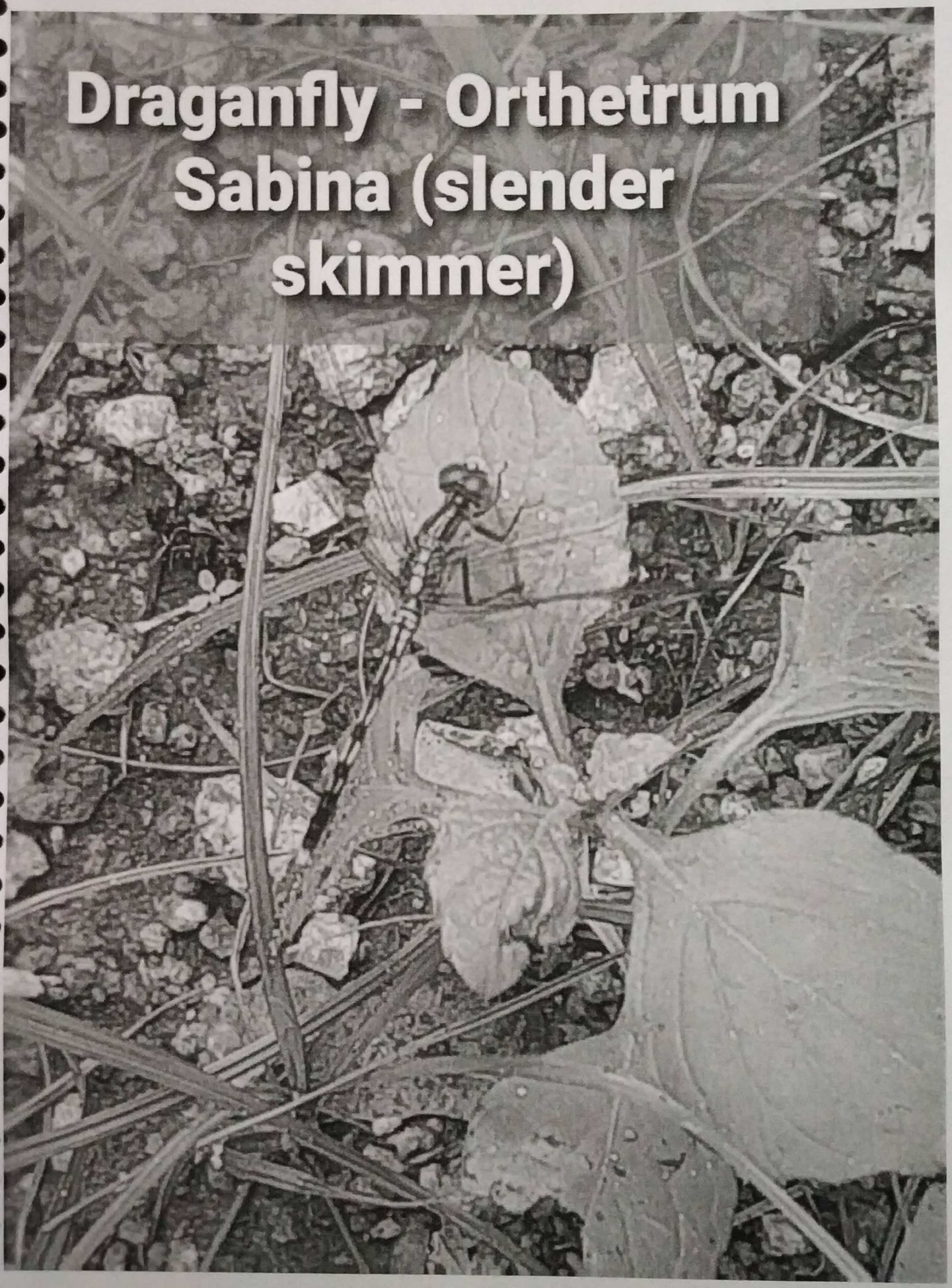
cockroach -
periplaneta
Americana

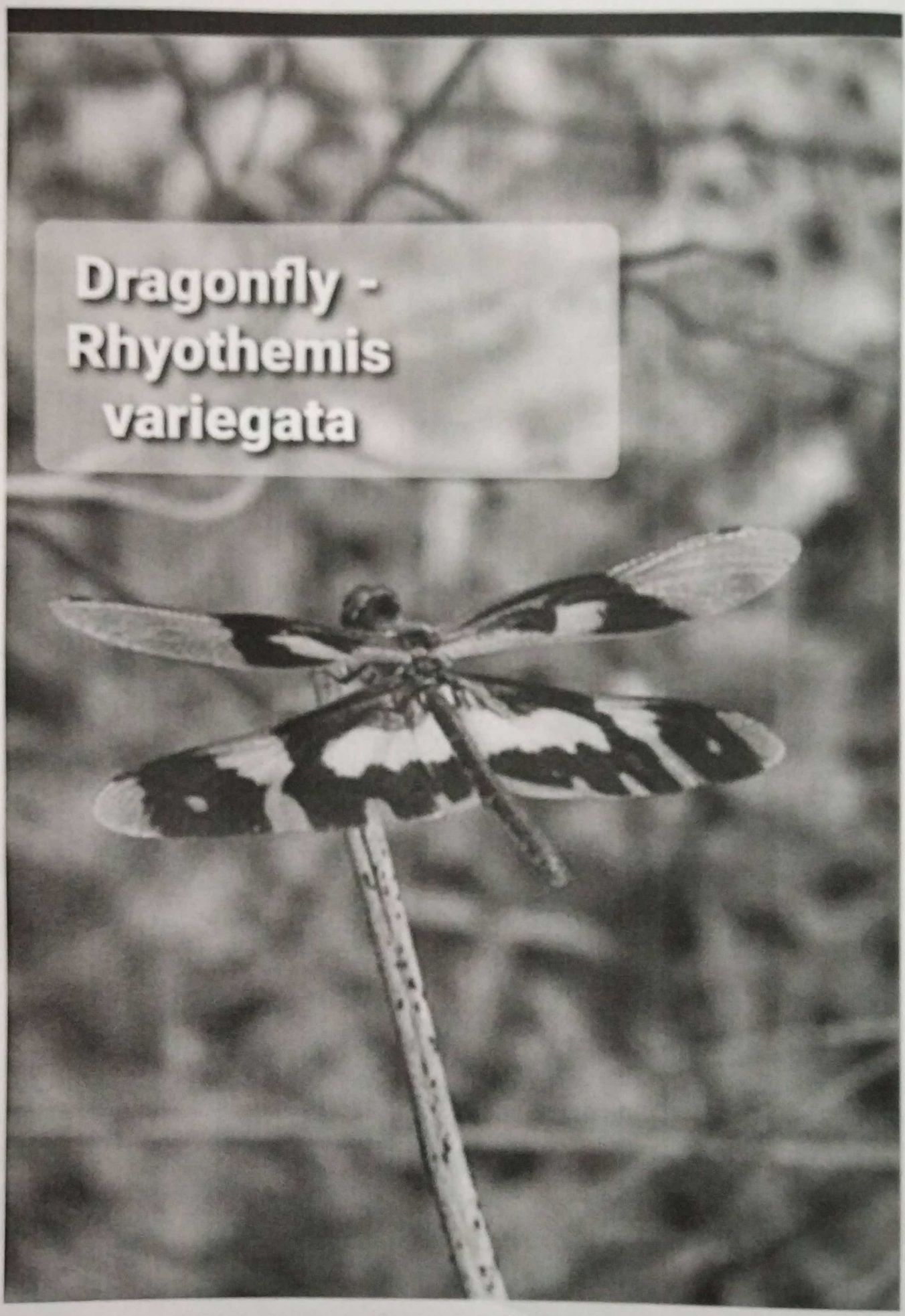
House fly- Musca domestica

2021.07.22 16:24



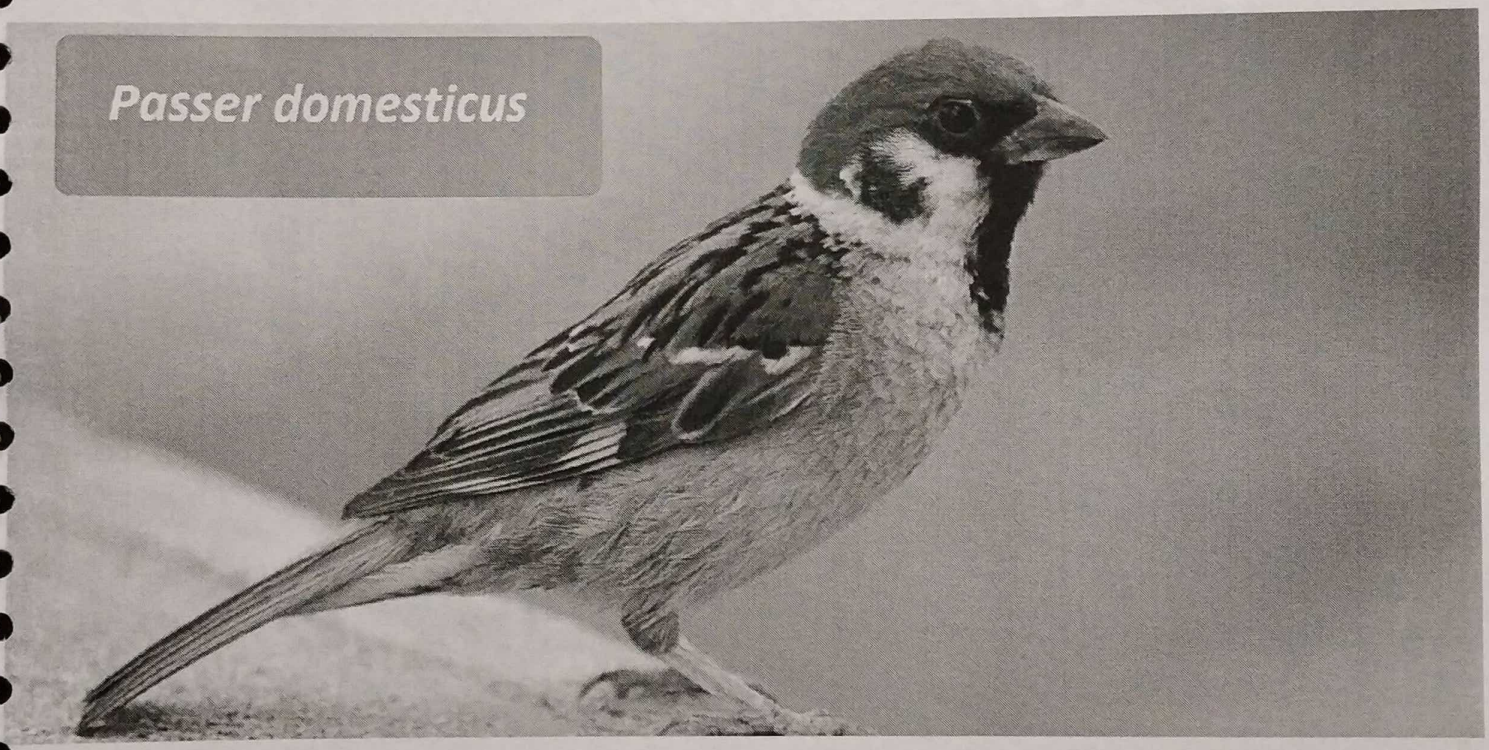
APis mellifera

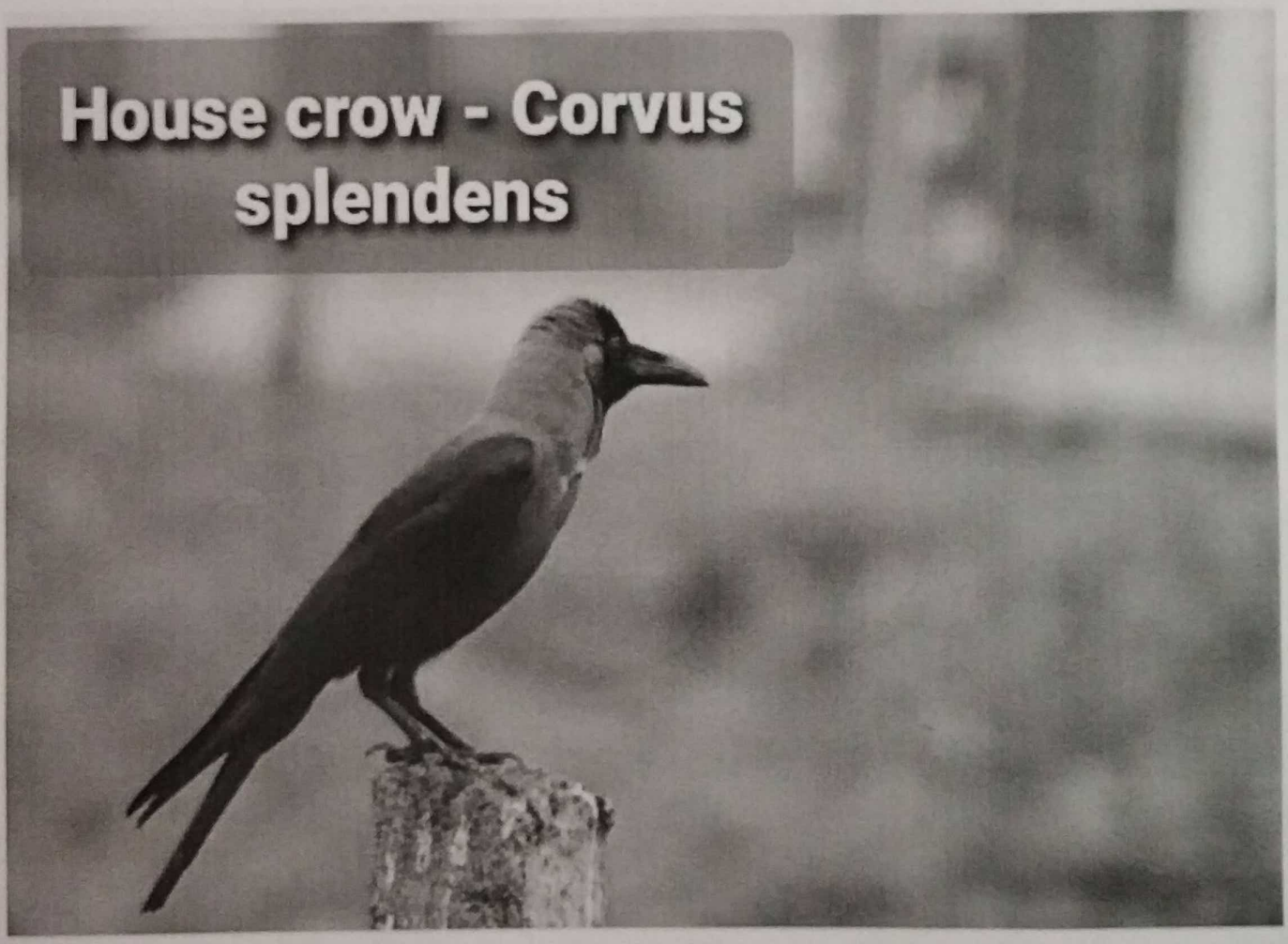

Draganfly - Orthetrum Sabina (slender skimmer)

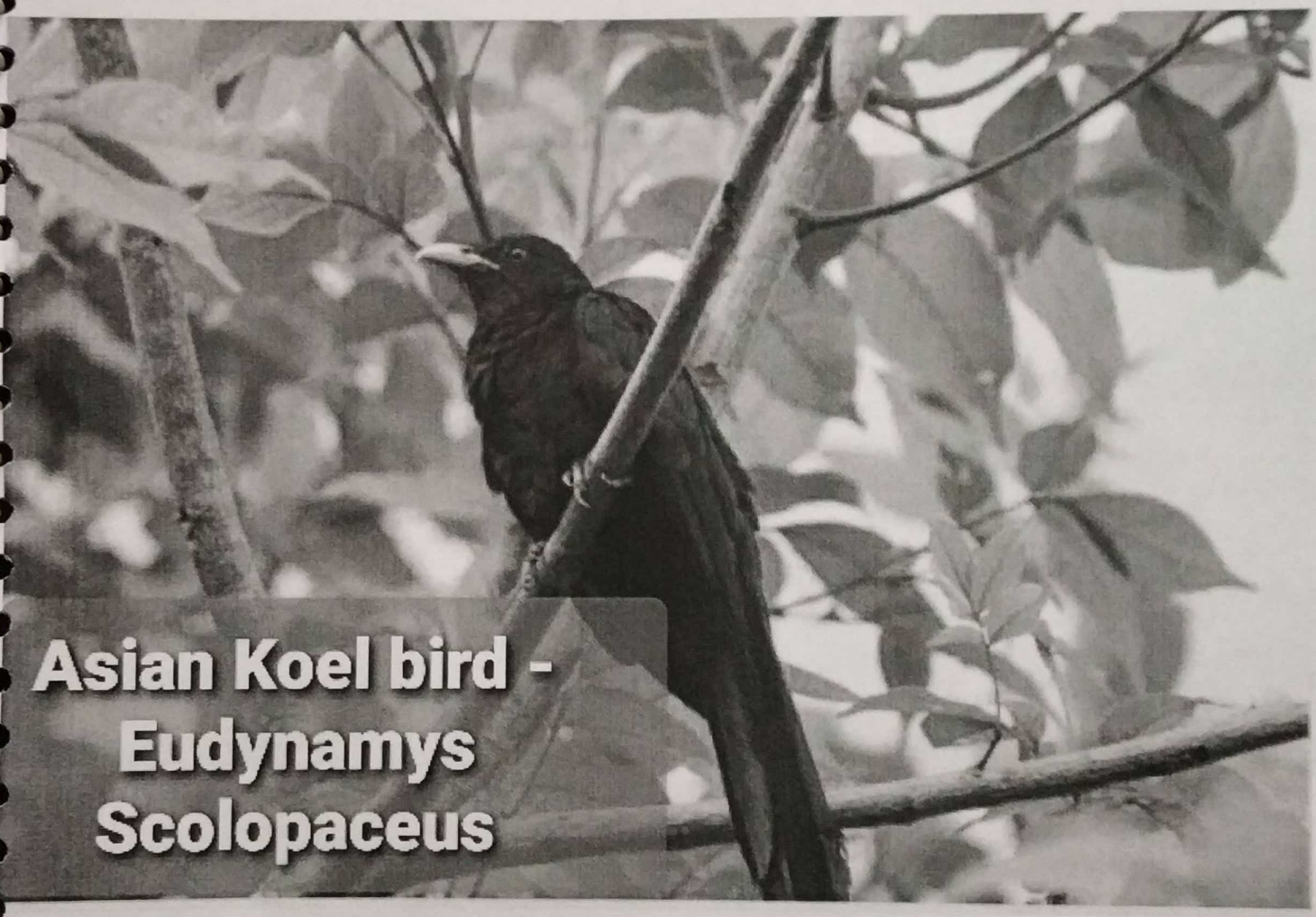

Dragonfly -
Rhyothemis
variegata


Acisoma
panorpoides

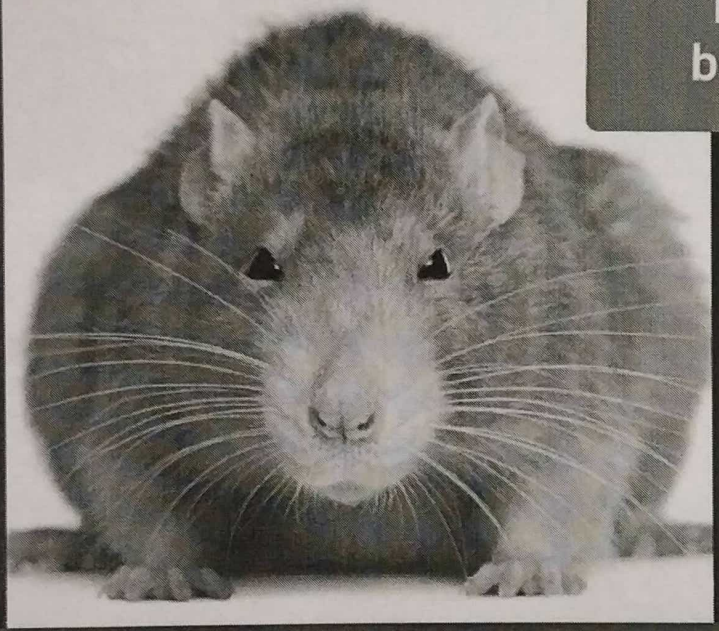
Acraea violae


Passer domesticus


House crow - Corvus splendens



Asian Koel bird - Eudynamys Scolopaceus



Bandicota bengalensis

# Rat - MusMusculus