A PROJECT REPORT ON

"INSECT BORNE DISEASES"

Submitted in Partial Fulfillment for the Award of the Degree in

BACHELOR OF SCIENCE

BY

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UNDER THE GUIDANCE OF

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TELANGANA TRIBAL WELFARE RESIDENCIAL DEGREE COLLEGE
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(DICHPALY-503175) (2020-2023)

CERTIFICATE

This is to certify that *JADAV PAVAN; B VINOD,CHAWAN AKASH, M RAKESH N VENKATESH ;P PAVAN , P RAVINDER ,V CHANDRASHEKAR* are a bonafide students of this college studying BScBzc (REGULAR) bearing HallTicket No: 20055080405013,5005;5007,5017,5019;5021,2023;2025 and we worked on the project titled **" INSECT BORNE DISEASEAS"**

under the guidance of B CHINNA LAXMAN, Department of Zoology Telangana Tribal Welfare Residential Degree College(Men) Kamareddy, Telangana University, Kamareddy during the period of 2020-2023.

This report is submitted in the partial fulfillment of the requirement of the award of "**Bachelor of Science** " degree from Telangana University.

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This is to certify that JADAV PAVAN; BANOTH VINOD , CHAWAN AKASH ,; M RAKESSH ,N VENKATESH ,P PAVAN ,R RAVINDER ,V CHANDRASHEKAR we a bonafide students of this collegestudying Bsc BZC-FINAL bearing

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"INSECT BORNE DISEASES" *under my guidance, sincerely to the best of my satisfaction during the period of 2020-2023.This report is submitted in the partial fulfillment of the requirement of the award of* "Bachelor of Science " *degree from Telangana University.*

PROJECT GUIDE

(CHINNA LAXMAN)

DECLARATION

we declare that this thesis is my own work and has not been submitted in any form for another degree or diploma at any university or other institute of tertiary education. Information derived from the published and unpublished work of others has been acknowledged in the text, and a list of references is given. Used information sources and background materials are quoted in the enclosed list of bibliography.

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INDEX

I

INTRODUCTION :

Malaria is a mosquito-born infectious disease of humans and other animals caused by protists (a type of microorganism) of the genus Plasmodium. It begins with a bite from an infected female mosquito, which introduces the protists via its saliva into the circulatory system, and ultimately to the liver where they mature and reproduce. The disease causes symptoms that typically include fever and headache, which in severe cases can progress to coma or death. Malaria is widespread in tropical and subtropical regions in a broad band around the equator, including much of Sub-Saharan Africa, Asia, and the Americas.

The term **malaria** originates from Medieval Italian: **mala aria-"bad air";** the disease was formerly called ague or marsh fever due to its association with swamps and marshland. Malaria was once common in most of Europe and North America, where it is no longer endemic, though imported cases do occur.

HISTROY :

References to the unique periodic fevers of malaria are found throughout recorded history Beginning in 2700 BC in China. Malaria may have contributed to the decline of the Roman Empire, and was so pervasive in Rome that it was known as the "Roman fever".

- 1820 Quinine first purified from tree bark. For many years prior, the groundbark had
- been used to treat malaria.
- 1880 Charles Louis Alphonse Laveran first identifies the malaria parasite. Heis
- awarded the 1907 Nobel Prize for the discovery.
- 1898 Sir Ronald Ross demonstrates that mosquitoes transmit malaria. He wins the
- 1902 Nobel Prize for this work.
- 1934 Hans Andersag in Germany discovers the Anti-malarial drug Chloroquine, which is not widely used until after World War II.
- 1939 Paul Hermann Muller in Switzerland tests the insecticide DDT. He winsthe Nobel Prize for this work in 1948.
- 1952 Malaria is eliminated in the United States. 1955 World Health Organization (WHO) launches Global Malaria EradicationCampaign, which excludes sub-Saharan Africa and is eventually abandoned
- 1976 William Trager and JB Jensen grow parasite in culture for the first time, opening the way for drug discovery and vaccine research.

CAUSE OF MALARIA

Avian malaria:Avian malaria is most notably caused by Plasmodium relictum, a protist that infects birds in tropical regions. There are several other species of Plasmodium that infect birds, such as-

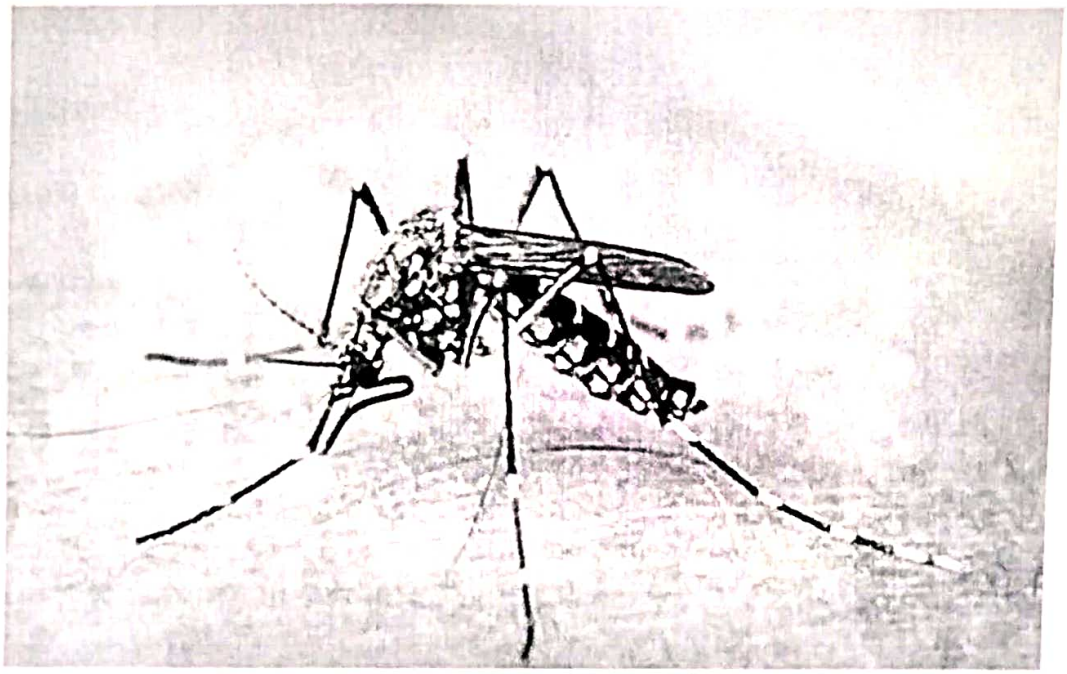
- Plasmodium anasum
- Plasmodium gallinacem

But these are of less importance except, in occasional cases, for the poultryindustry. However, in areas where avian malaria is newly introduced, such as the islands of Hawaii, it can be devastating to birds that have lost resistance over evolutionary time

IN HUMAN :

Among the parasites of the genus Plasmodium four species have been identified which can cause disease in humans:

- Plasmodium falciparum
- Plasmodium vivax .
- Plasmodium ovale
- Plasmodium malaria
- Plasmodium knowlesi.



FEMALE ANOPHELES MOSQUITO

Symptoms :

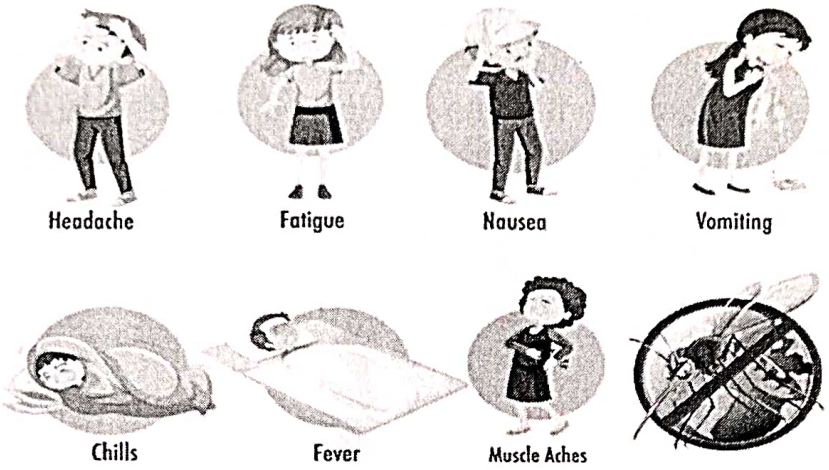
Signs and symptoms of malaria may include:

- ✓ Fever
- ✓ ChillsGeneral feeling of discomfort
- ✓ Headache
- ✓ Nausea and vomiting

- ✓ Diarrhea
- ✓ Abdominal pain
- ✓ Muscle or joint pain
- ✓ Fatigue
- ✓ Rapid breathing
- ✓ Rapid heart rate
- ✓ Cough

Some people who have malaria experience cycles of malaria "attacks." An attack. usually stwith shivering and chills, followed by a high fever, followed by sweating and a return to normal temperature

MALARIA SYMPTOMS



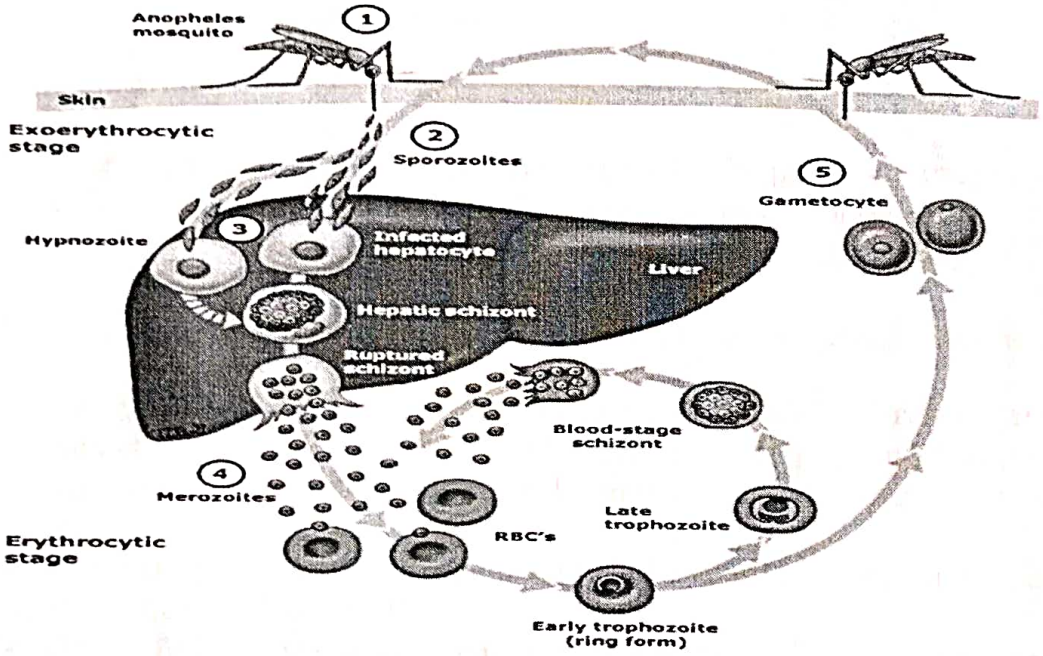
Life Cycle of Malaria :

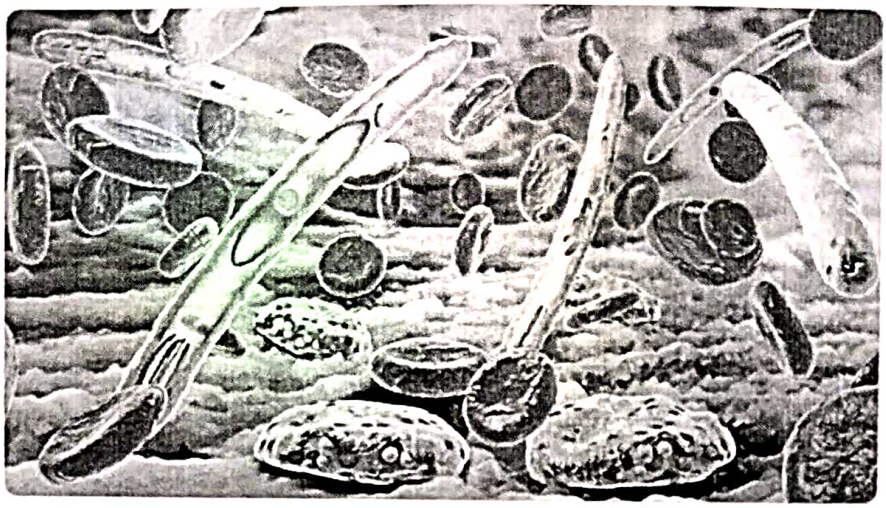
Malaria parasite exists in the form of a motile sporozoite. The vector of malaria i.e. the female Anopheles mosquito transmits the malarial sporozoites into the hosts. When an infected mosquito bites a human, the sporozoites are injected into the blood through the mosquito's saliva.

The sporozoites travel into our body and accumulate in the liver. These parasites initially multiply within the liver, by damaging the liver and rupturing the blood cells in the body. Malaria kills by causing the destruction of the red blood cells in the host. The parasites reproduce asexually in the RBCs, bursting the cells and releasing more parasites to infect more cells. The rupture of red blood cells by the malaria parasite releases a toxin called hemozoin which causes the patient to experience a condition known as the chills.

When the female Anopheles mosquito bites an infected human, the parasites enter the mosquito's body along the human blood it is drinking. It is inside the mosquito's body that the actual development and maturing of the parasite happens. The parasites produced in the human body reach the

intestine of the mosquito where the male and females cells fertilize each other to lead to the formation of a sporozoite. On maturing, the sporozoite breaks out the mosquito's intestine and migrate to the salivary glands. Once they reach salivary glands, they wait till the mosquito bites another human and the process of infection and disease begins all over again. It is prudent however to observe that the complete development of the malaria parasite takes place in two different hosts; humans and mosquitoes.





Cerebral malaria

Complications :

Malaria can be fatal, particularly when caused by the plasmodium species common in Africa. The World Health Organization estimates that about 94% of all malaria deaths occur in Africa — most commonly in children under the age of 5.

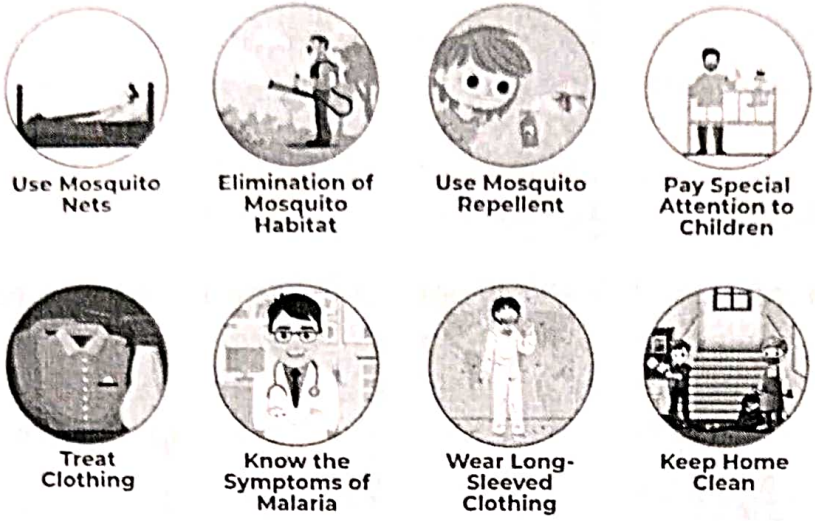
Malaria deaths are usually related to one or more serious complications, including:

- . Very low blood sugar can result in coma or death. **Cerebral malaria.** If parasite-filled blood cells block small blood vessels to your brain (cerebral malaria), swelling of your brain or brain damage may occur. Cerebral malaria may cause seizures and coma.
- **Breathing problems.** Accumulated fluid in your lungs (pulmonary edema) can make it difficult to breathe.
- **Organ failure.** Malaria can damage the kidneys or liver or cause the spleen to rupture. Any of these conditions can be life-threatening.
- **Anemia.** Malaria may result in not having enough red blood cells for an adequate supply of oxygen to your body's tissues (anemia).
- **Low blood sugar.** Severe forms of malaria can cause low blood sugar (hypoglycemia), as can quinine — a common medication used to combat malaria

Malaria may recur

Some varieties of the malaria parasite, which typically cause milder forms of the disease, can persist for years and cause relapses.

Prevention of Malaria



Prevention :

- If you live in or are traveling to an area where malaria is common, take steps dawn. To protect yourself from mosquito bites, you should:
- **Cover your skin.** Wear pants and long-sleeved shirts. Tuck in your shirt, and tuck pant legs into socks.
- **Apply insect repellent to skin.** Use an insect repellent registered with the Environmental Protection Agency on any exposed skin. These include repellents that contain DEET, picaridin, IR3535, oil of lemon eucalyptus (OLE), para-menthane-3,8-diol (PMD) or 2-undecanone. Do not use a spray directly on your face. Do not use products with oil of lemon eucalyptus (OLE) or p-Menthane-3,8-diol (PMD) on children under age 3.
- **Apply repellent to clothing.** Sprays containing permethrin are safe to apply to clothing.
- **Sleep under a net.** Bed nets, particularly those treated with insecticides, such as permethrin, help prevent mosquito bites while you are sleeping.
- **Preventive medicine**
- If you'll be traveling to a location where malaria is common, talk to your doctor a few months ahead of time about whether you should take drugs before, during and after your trip to help protect you from malaria parasites.
- In general, the drugs taken to prevent malaria are the same drugs used to treat the disease. What drug you take depends on where and how long you are traveling and your own health.

Treatment for malaria

the first pharmaceutical used to treat malaria, quinine, was derived from the tree bark of Cinchona calisaya

Quinine synthesis was first attempted in 1856 by William Henry Perkins, but synthesis was not successful until 1944.

Doxycycline is an antibiotic that also can be used to prevent malaria. It is available in the United States by prescription only. It is sold under multiple brand names and it is also sold as a generic medicine.

Chloroquine phosphate is used to prevent and treat malaria. It is also used to treat amebiasis. Chloroquine phosphate is in a class of drugs called antimalarials and amebicides. It works by killing the organisms that cause malaria and amebiasis.

PREACAUTION :

The risk of disease can be reduced by preventing mosquito bites through the use of **mosquito nets** and **insect repellents** or with mosquito-control measures such as spraying insecticides and draining standing water. Several medications are available to prevent malaria for travellers in areas where the disease is common.

- Apply mosquito repellent with DEET (diethyltoluamide) to exposed skin.
- Drape mosquito netting over beds.
- Put screens on windows and doors.
- Treat clothing, mosquito nets, tents, sleeping bags and other fabrics with an insect repellent called permethrin.
- Wear long pants and long sleeves to cover your skin.

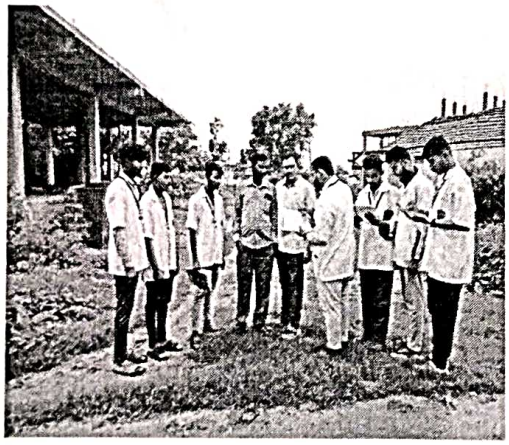
precautions should be taken to avoid malaria.

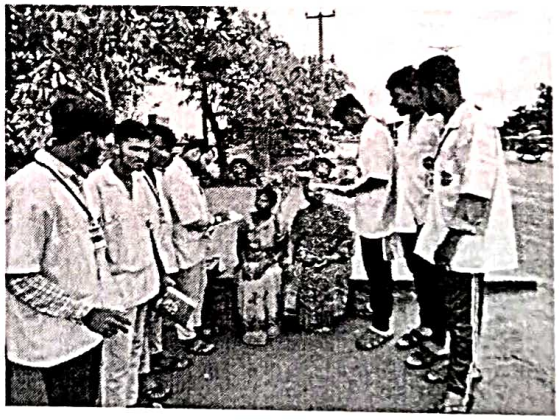
- wearing covered clothes.
- using mosquito repellent creams.
- cleaning water tanks regularly
- using mosquito nets

- Malaria is caused by parasites and is spread by mosquitoes. · We can prevent malaria by protecting ourselves from a mosquito bite.Mosquito lay eggs in still water.

SURVEY ON MALARIA DISEASE IN SARAMPALLY VILLAGE :

S NO	NAME OF THE PERSON	AGE	FATIGUE	FEVER	BODYACHAE	SWEATS	HEADACHE	VILLAGE
1	RAJAMANI	52	✓	✓	✓	✓	✓	SARAMPALLY
2	BADYA	49	✓	_	✓	✓	✓	SARAMPALLY
3	LAXMI	36	✓	✓	✓	✓	✓	CHINNA MALLAREDDY
4	SAYAVVA	47	✓	✓	_	✓	✓	CHINNA MALLAREDDY
5	BALRAJU	45	_	✓	✓	✓	✓	SARAMPALLY
6	MD JAVID	28	✓	✓	✓	✓	✓	SARAMPALLY





Visited to district hospital kamareddy

The team surveyed the community's knowledge of malaria prevention and treatment; implemented a health information intervention using tutorials in a variety of media; and observed the community's use of previously distributed insecticide treated nets (ITNs) using a digital pen application.

The data that we collected from the village named Sarampally in Kamareddy District, about **Malaria disease**. There was no multiple numbers of cases of Malaria in Sarampally Village. Only a few cases i.e., 7 cases for month are recorded here. The villagers are saying that they do not have any symptoms like **fatigue , pain, fever, sweats and headachae**, Even if they have those symptoms, there are only two or three, which is not Malaria .The villagers maintaining their **surroundings clean and hygiene** which benefitting them to be healthy without any disease.

CONCLUSION ON MALARIA – SARAMPALLY VILLAGE

The people in the village are almost working in the fields and a few are

going to city for working. Most of the people belonging to the village not participating in the social gatherings and if are in crowds they are using masks for safety. People in the village are claiming that they are eating a healthy diet, and saying that they do not have any diseases like Malaria .

The people of the village also telling that, pandemic Corona made everyone to be aware themselves about the cleanliness, social distance, hygiene, wearing masks, which benefited the villages to be aware of all

There are also no such diseases which will reduce the immune system, which favors the growth of the bacteria inside the body.

And even the children are also healthy without any diseases like Malaria .

THANK YOU

Ref:

https://medlineplus.gov/druginfo/meds/a682318.html#:~:text=Chloroquine%20phosphate%20is%20used%20to,that%20cause%20malaria%20and%20amebiasis.