RESEARCH ARTICLE

An image analysis of Microscopic Protozoan Parasites using digital damera and video recorder in the Fishes of Lonavala.

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Manuscript Details	ABSTRACT

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This Poster reviews image analysis, aiming at automated diagnosis or screening of Protozoan parasites in digital camera image microscope of thin blood film smears. The present study has examined fishes of Lonavala region. The objective of the information extraction operation is to replace visual analysis of the image data with quantitative techniques for automating the identification of features in a scene. This involves the analysis of multispecies image data and the application of statistically based decision rules for determining the identities of each pixel in an image correct cover. The intent of species classification process is to categorize all pixels in a digital camera image into one of the several species. The classified data may be used for species identification.

Keywords: Using Digital Camera Images,Protozoan Parasites.

INTRODUCTION

Research has acquired an entirely new dimension with the advent of computers. Right from the stage of formulating the problem of preparing the report, almost all research activities require computers. This point has been discussed in a greater detail in the next section. The first description of rodlet cells (RCs) dates back to 1892, when the lohan interpreted these conspicuous cells as sporocysts of an unknown coccidian parasite (Thelohan 1892). View and named the organism Rhabdospora thelohani after its discoverer (Laguesse 1895).

Semi-thin sections (1 mm) were cut in an ultramicrotome (Reichert, Austria) and stained with 1 % toluidine blue (Sigma-

Aldrich, St. Louis, Missouri, USA) for 2 min. Light microscopical preparations were inspected with an Olympus BX-51 microscope and photographed with a CoolSNAP-Pro digital camera. General image parameters were adjusted with Adobe Photoshop 8. Ultra-thin sections (70 nm) were cut with a diamond knife (Pelco, Redding, California, USA) on a Reichert ultramicrotome, stained with acetate and lead citrate and analyzed with a Zeiss EM 900 electron microscope.

Several species of Protozoan parasites occur in fishes and most of them cause severe damage in view of the epidemiological importance.

MATERIAL AND METHOD

Binocular microscope with 2 Megapixel Digital Camera is used for the current work. The fish material for investigation was obtained from the rivers reservoirs and fish market of Lonavala region. The blood, gills &gallbladder of fishes were examined to detect the protozoan parasites

Schrudinns fixative and Giemsa Stain is used for staining. For transmission electron microscopy, olfactory organs were excised under sea water and instantly transferred to the fixation solution containing 2.5% glutaraldehyde and 1% formalde-hyde in sodium cacodylate buffer, pH 7.4. After overnight fixation at 4°C, the tissue was postfixed in reduced osmium (1:1 mixture of 2% osmium tetroxide and 3% potassium ferro- cyanide) for 2 h, dehydrated in a graded series of ethanol and acetone and embed- ded in Eponate (Pelco, Redding, California, USA).

Benefits of Computers:
- Computers serve a great deal of help in biological diagnoses and imaging of internal body parts.
- Students can make use of photograph & video recording attached Internet Knowledge source such as compact Discs CDs and DV Ds as well as do their computational work.
- Computers have become a must for every student even though He/she may not be a student of computer science.


Fig.1: Images: Digital Microscope

RESULTS

As already discussed above, an object is recognized by the computer by either its identifier or name. The object may be a variable of basic type or a function, a structure, or a union. The macro names and macro variables do not figure in the Scope because macros are replaced by the preprocessor taken sequences before the semantic phase of program translation. An identifier may also represent different objects in different scopes.

The scope of an identifier is that portion of the program ode in which it is visible, that is, it can be used. Four types of scopes are defined in c language. These are as follows.

1. If the declaration of an identifier is outside of any block or list of parameters.
2. If the declaration of an identifier is inside the block and the scope ends with the end of the block. A block of statements starts with the left brace ({) and ends with the closing right brace (})
3. If the declaration of an identifier is inside the list of parameters in function definition, it is the function scope, which ends with the end of function definition.
4. If the declaration of identifier appears within the list of parameters of a function prototype which is not part of function definition, the scope of identifier is limited to the function prototype. The scope ends with the end of declaration.
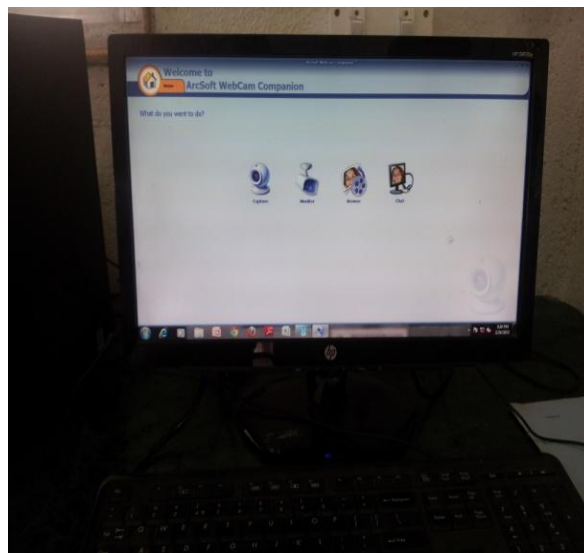
REFERENCES

1. Abolarin MO. A new species of Henneguya (myxosporida Protozoa) from West African cat fish,Clrias lazera Vaal) with a review of the genushenneguya(Thelohan). *The Afr. J. Trop. Hydrobiol. Fish*, 1996; 1: 93-105.

2. Chase JC, Dawson-Coates JA, Haddow JD, Stewart MH et al. Analysis of Kudoa thyrsites(Myxozoa: Myxosporea) spore antigens using monoclonal antibodies. *Dis Aquat Org*, 2001; 45:121–129

3. Chitwood MB, Lichtenfels JR. Identification of parasitic metazoa in tissue sections. *Exp Parasitol*, 1972; 32:407–519

4. Clark G. Staining procedures, 4th edn. Biological Stain Commission. Williams and Wilkins, Baltimore, MA, 1981.

5. Hoffman GL. Parasites of North American freshwater fish. Comstock Publishing Associates (Cornell University Press), Ithaca, NY, 1999.