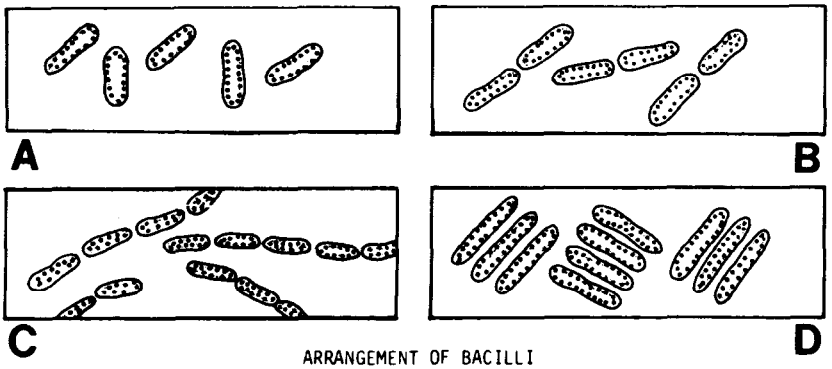
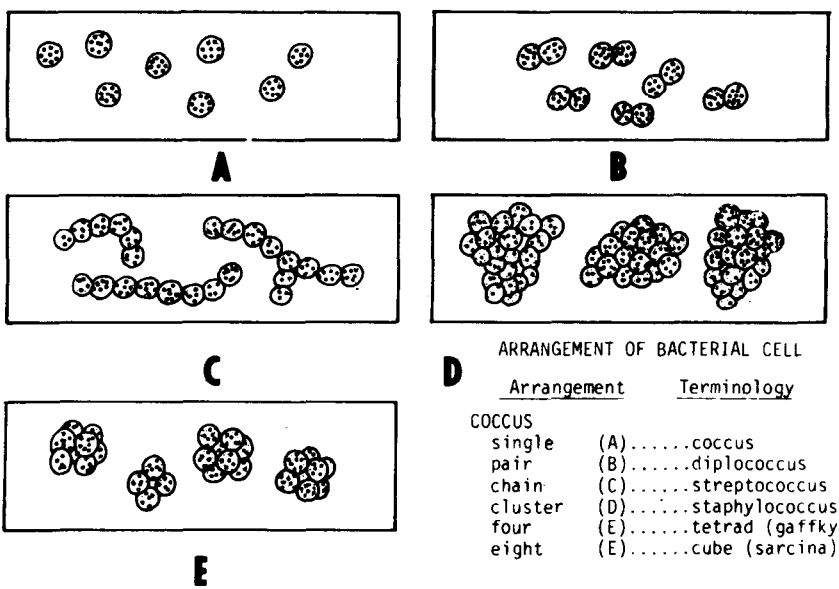
Appendix B

Bacteriological and Parasitic Plates

B-1 Bacteriological



ARRANGEMENT OF BACILLI



ARRANGEMENT OF BACTERIAL CELL

ARRANGEMENT OF COCCI

Arrangement	Terminology
COCCUS	
single	(A).....coccus
pair	(B).....diplococcus
chain	(C).....streptococcus
cluster	(D).....staphylococcus
four	(E).....tetrad (gaffkya)
eight	(E).....cube (sarcina)
BACILLUS	
single	(A).....bacillus
pair	(B).....diplobacillus
chain	(C).....streptobacillus
palisade	(D).....palisade

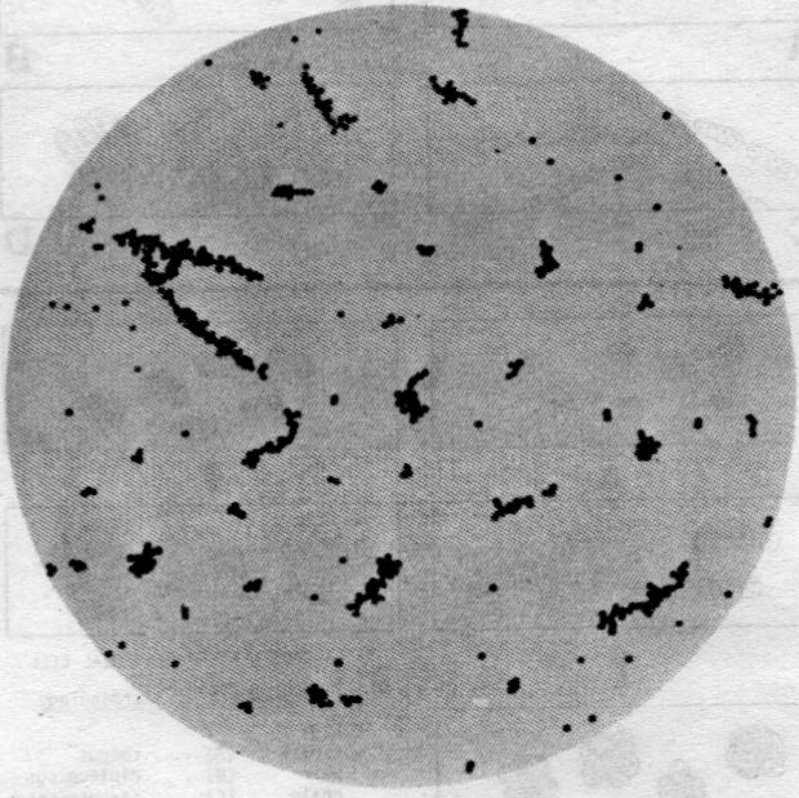


Figure 1. Gram-stained smear of Staphylococcus.

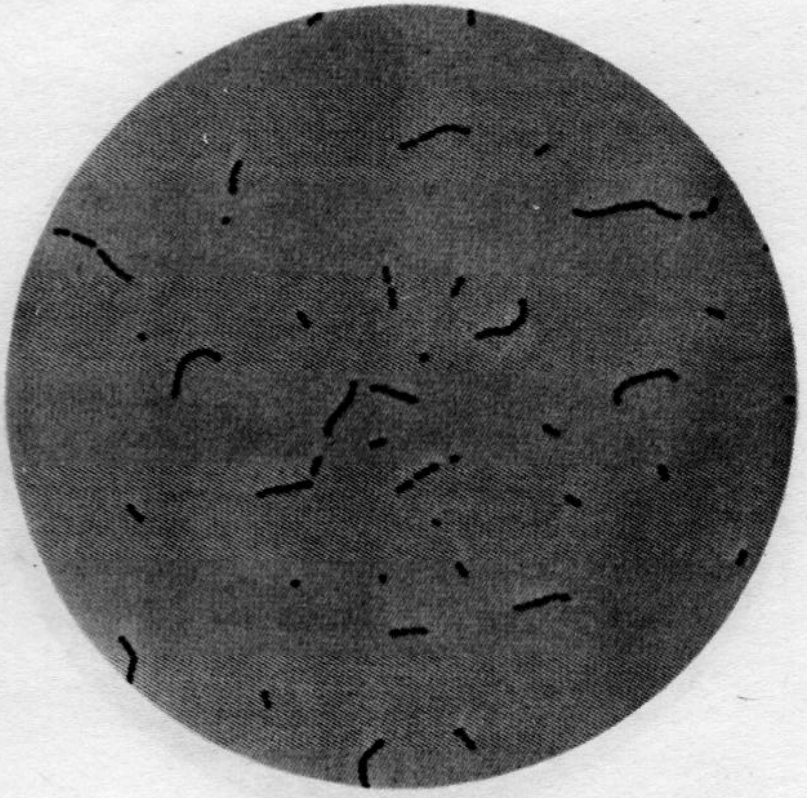


Figure 2. Gram-stained smear of Streptococcus.

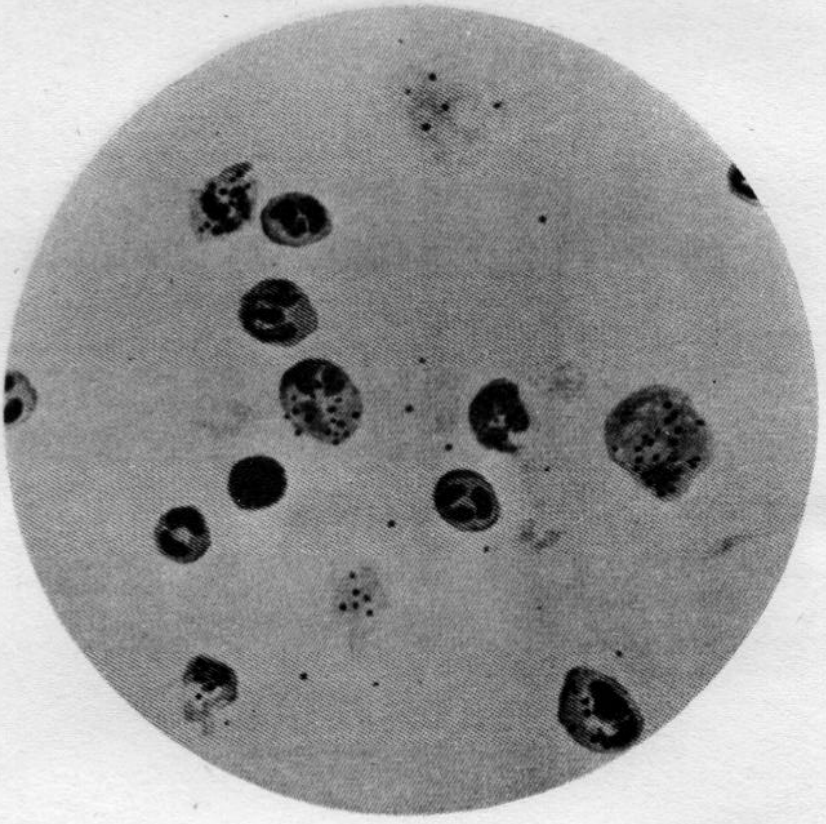


Figure 3. Gram-stained smear of Neisseria gonorrhea from urethral exudate.

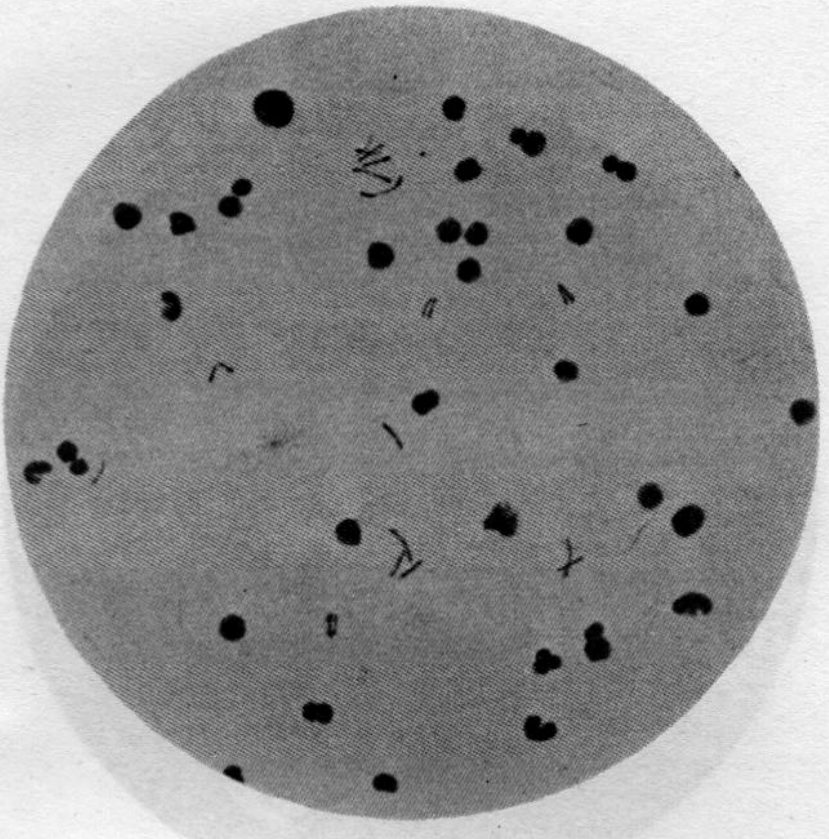


Figure 4. Acid-fast stained smear of Mycobacterium tuberculosis in sputum.

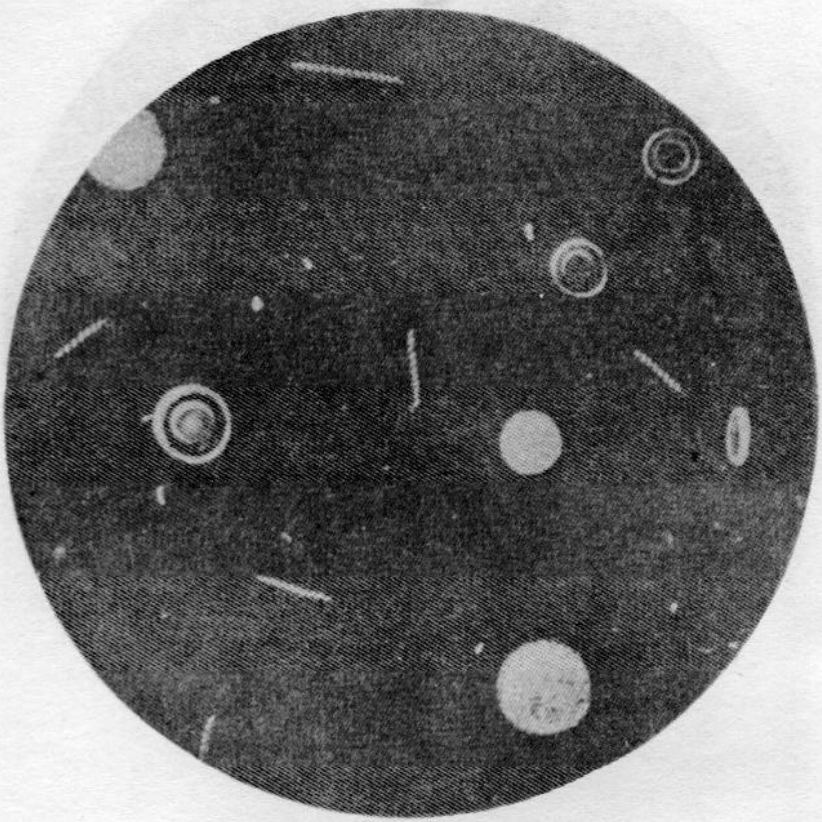
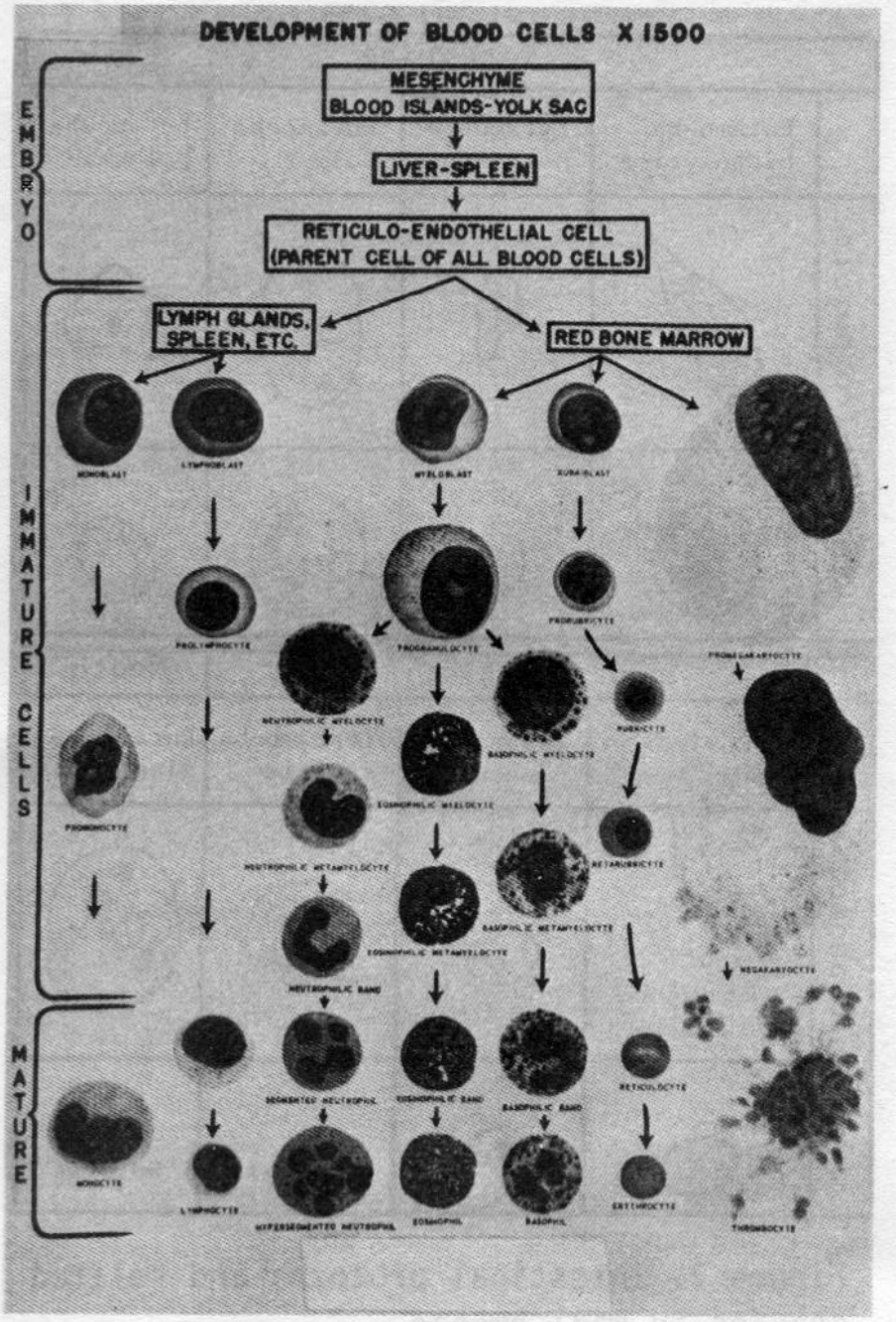


Figure 5. Dark-field mount of Treponema pallidum in exudate from penile lesion.


DEVELOPMENT OF BLOOD CELLS X 1500
EMBRYO
MESENCHYME
BLOOD ISLANDS-YOLK SAC
LIVER-SPLEEN
RETICULO-ENDOTHELIAL CELL
(PARENT CELL OF ALL BLOOD CELLS)
IMMATURE CELLS
LYMPH GLANDS, SPLEEN, ETC.
RED BONE MARROW
MONOBLAST
LYMPHOBLAST
MYELOBLAST
ERYTHROBLAST
PROLYMPHOCYTE
PROMYELOCYTE
PROERYTHROCYTE
PROMEGAKARYOCYTE
NEUTROPHILIC MYELOCYTE
BASOPHILIC MYELOCYTE
ERYTHROCYTE
PROMONOCYTE
EOSINOPHILIC MYELOCYTE
NEUTROPHILIC METAMYELOCYTE
METAERYTHROCYTE
BASOPHILIC METAMYELOCYTE
EOSINOPHILIC METAMYELOCYTE
MEGAKARYOCYTE
NEUTROPHILIC BAND
MATURE
SEGMENTED NEUTROPHIL
EOSINOPHILIC BAND
BASOPHILIC BAND
RETICULOCYTE
MONOCYTE
LYMPHOCYTE
HYPERSEGMENTED NEUTROPHIL
EOSINOPHIL
BASOPHIL
ERYTHROCYTE
THROMBOCYTE

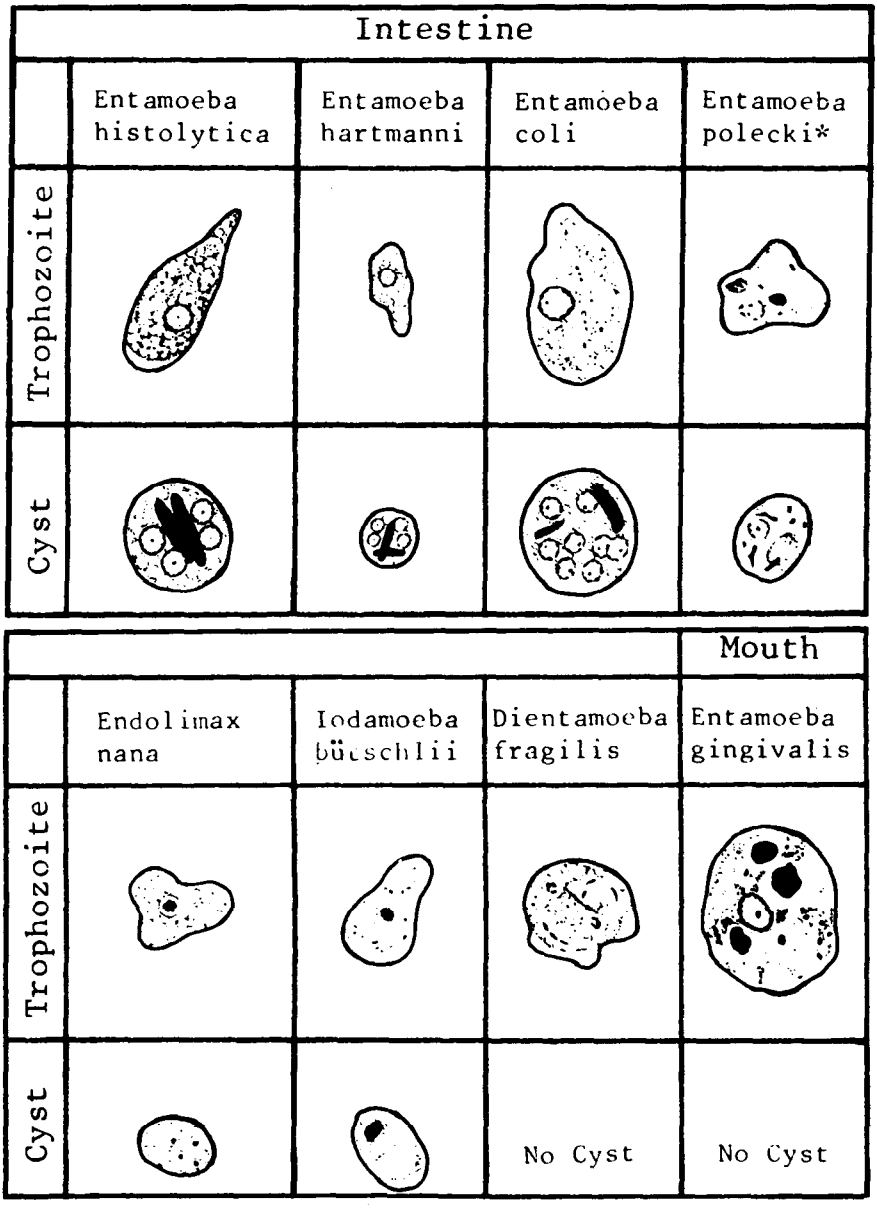
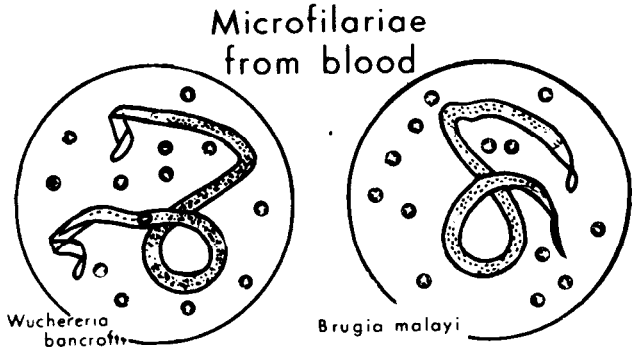


Figure 7. Intestinal protozoa and related species in man: Amebae.
Iron-hematoxylin stain.



Filariasis

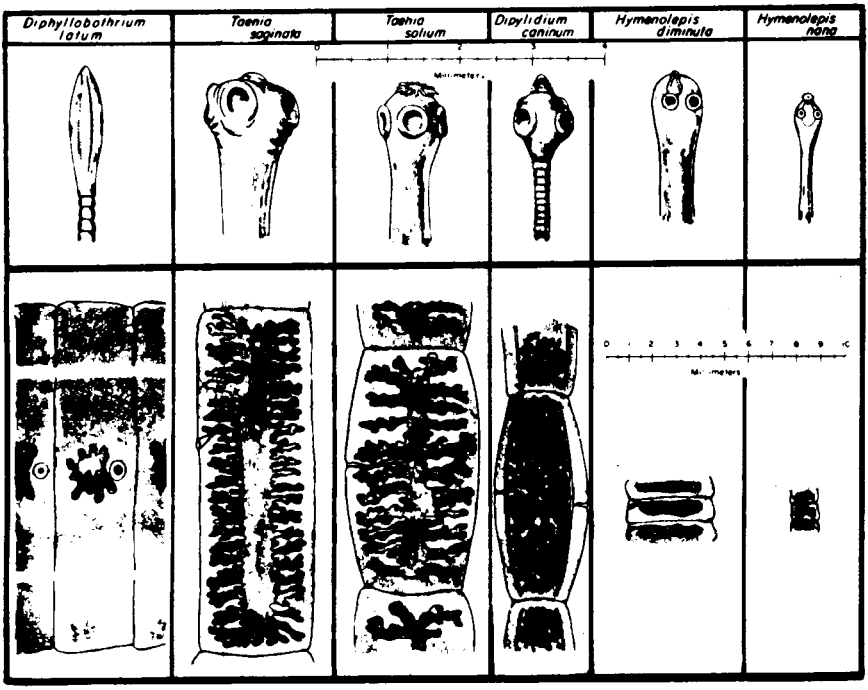


Figure 8. Scoleces and gravid proglottids of the cestode parasites commonly found in humans.

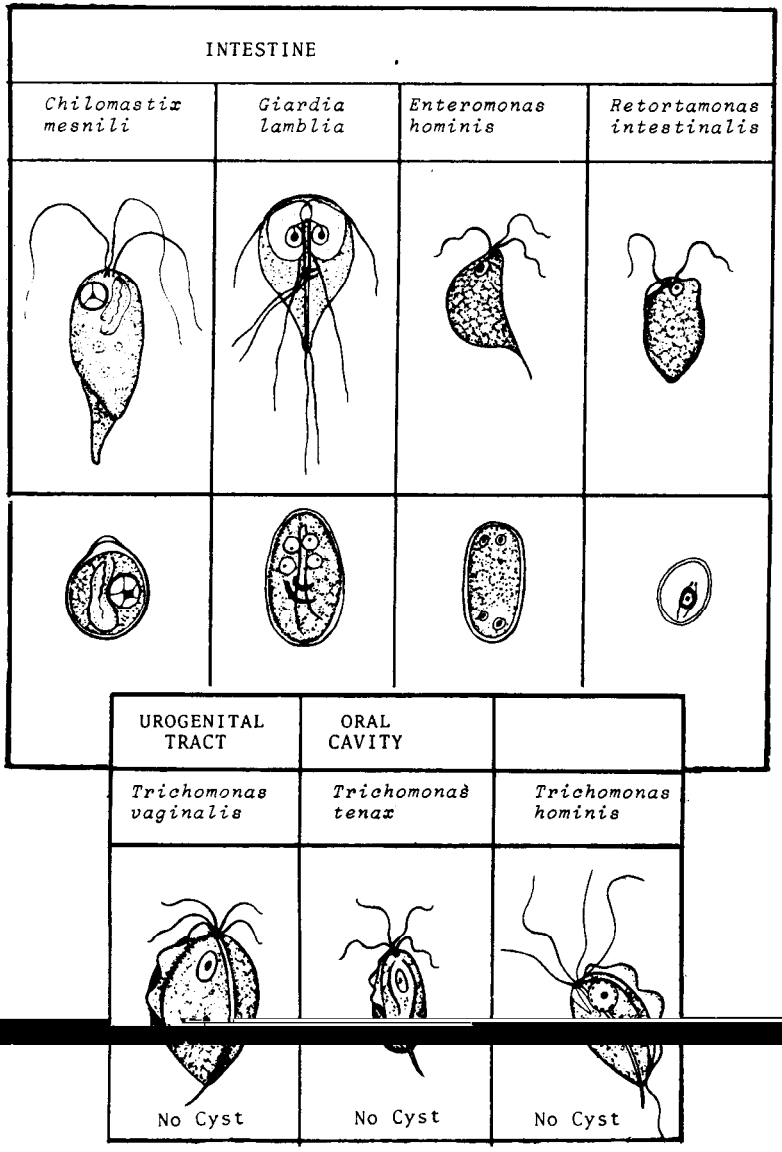


Figure 9. Intestinal protozoa and related species in man: Flagellates. Iron-hematoxylin stain.

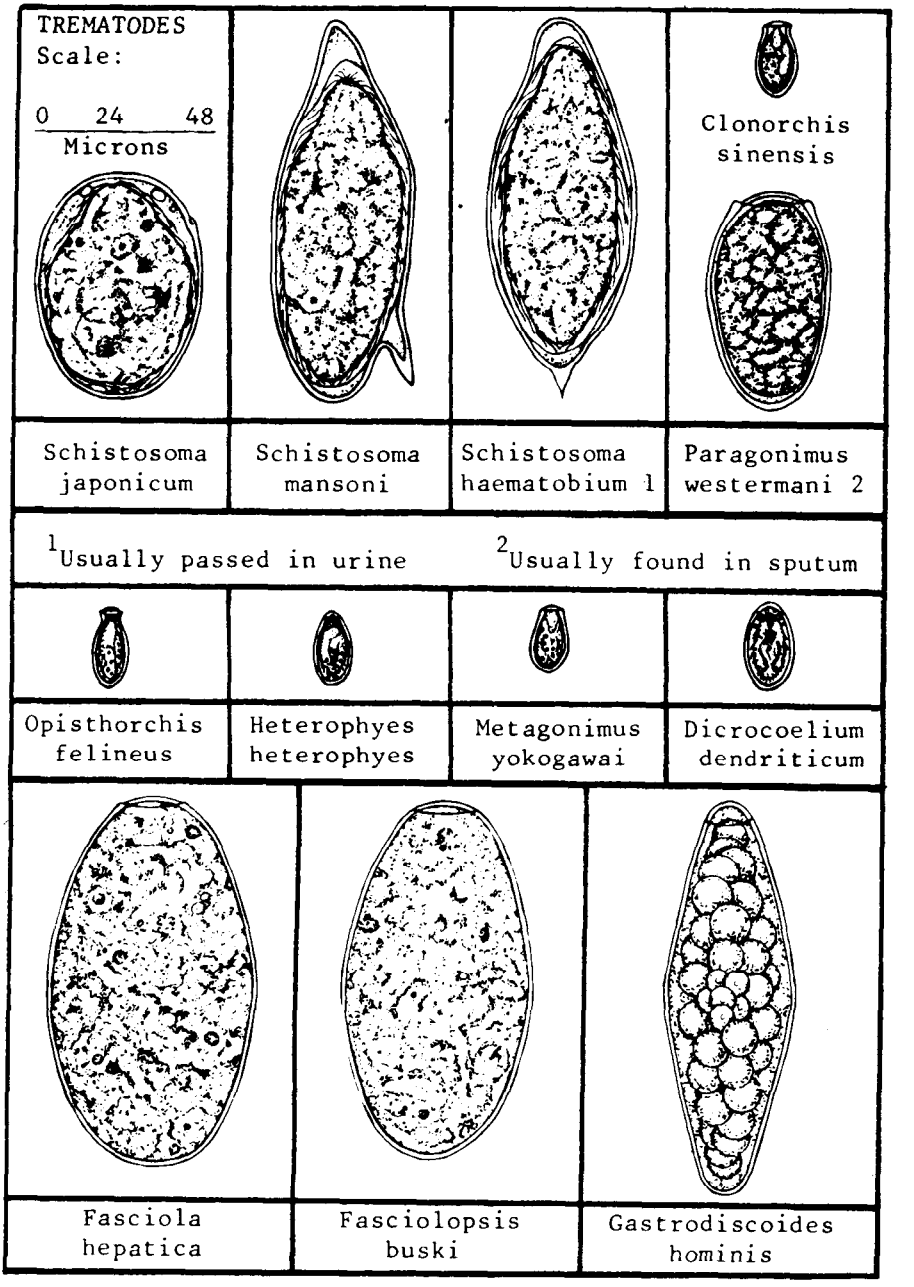


Figure 10. Trematode eggs found in humans.

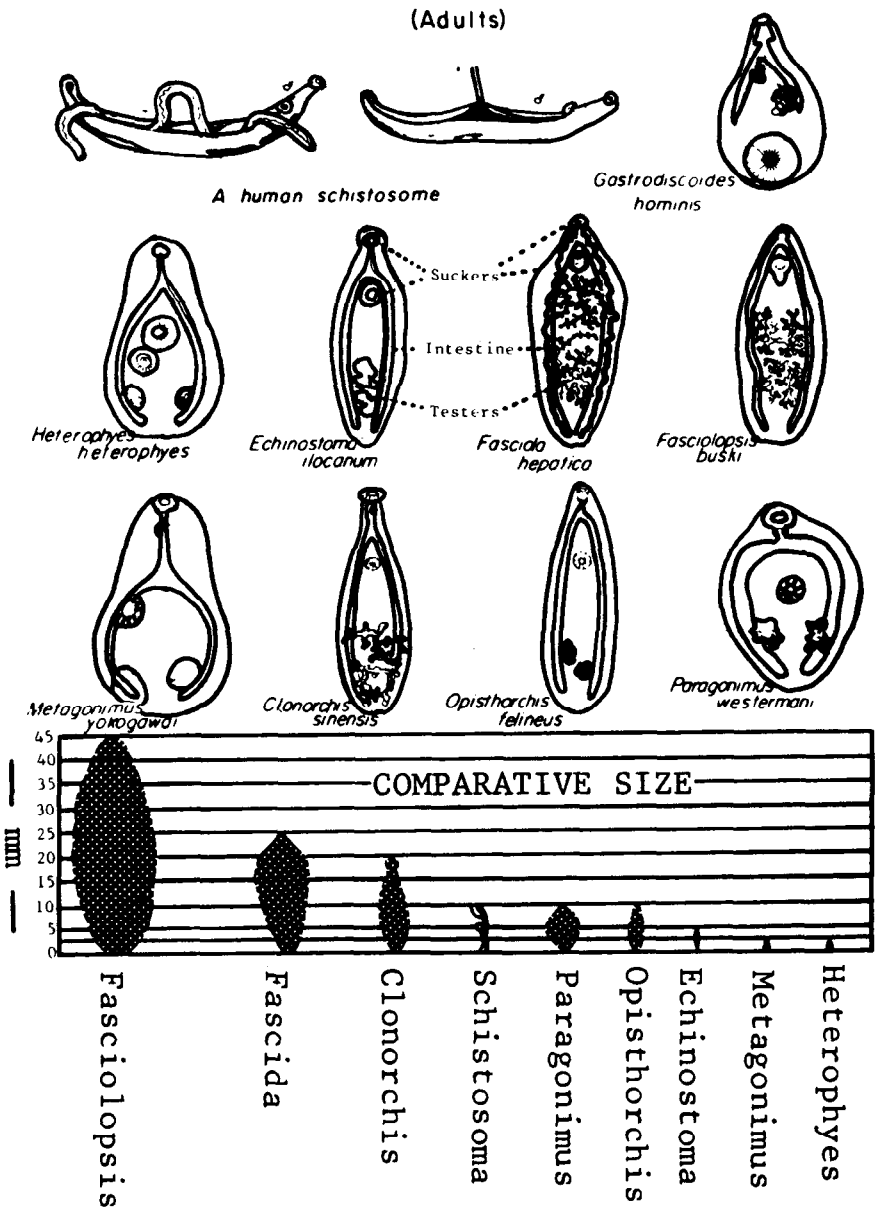


Figure 11. Different morphology of adult trematodes infecting humans.

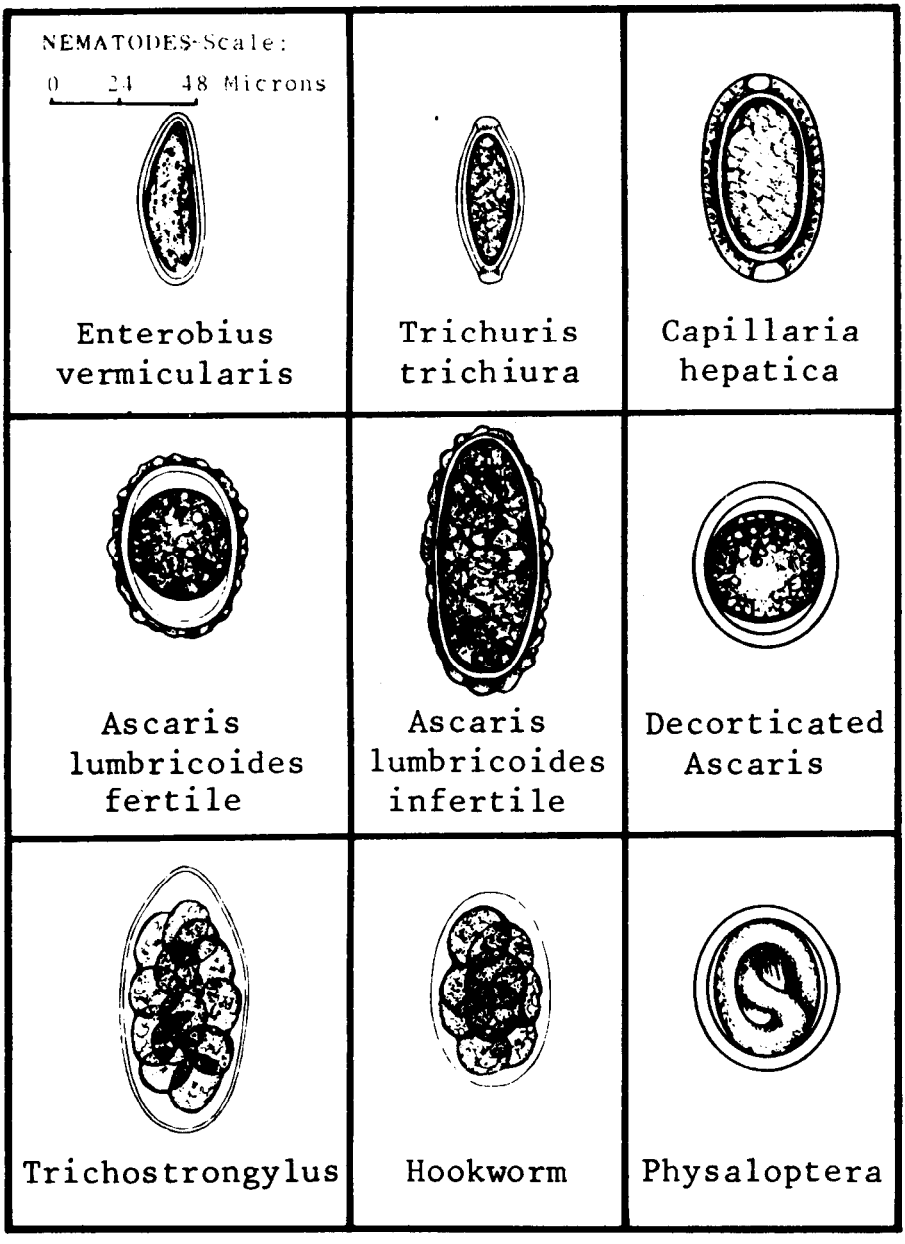


Figure 12. Nematode eggs found in humans.

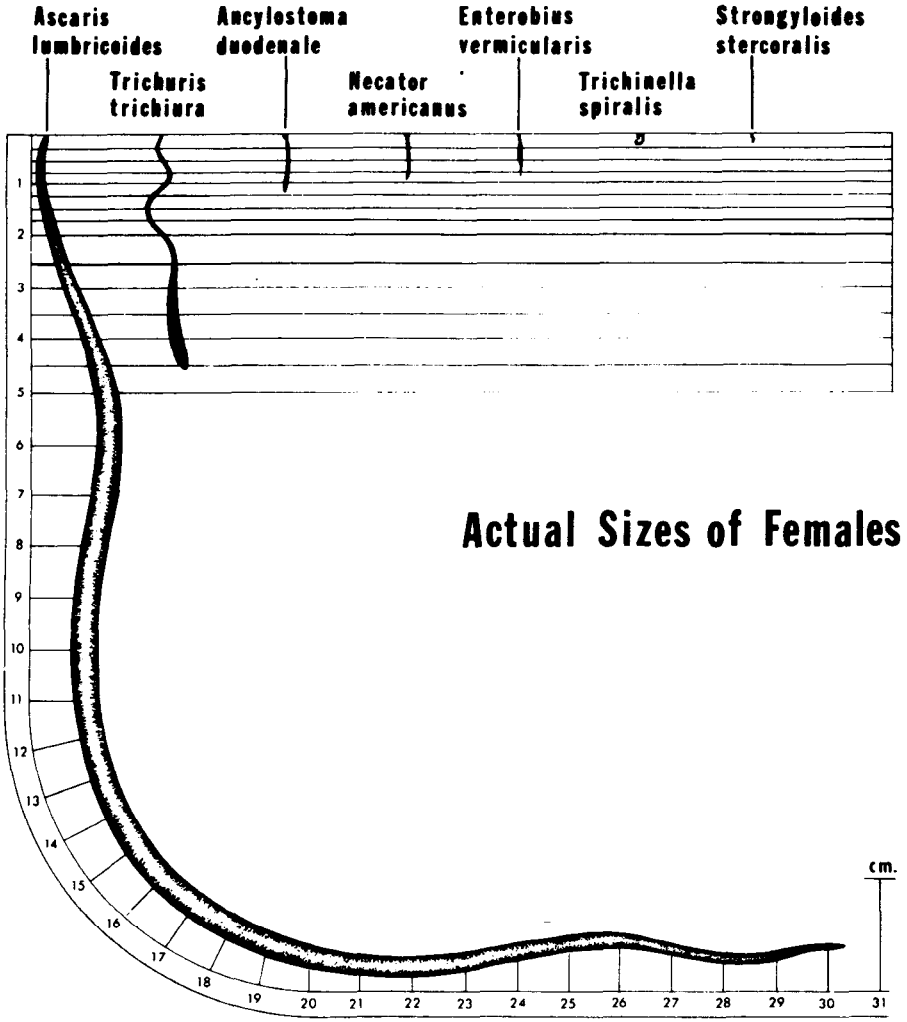


Figure 13. Relative sizes of intestinal roundworms.

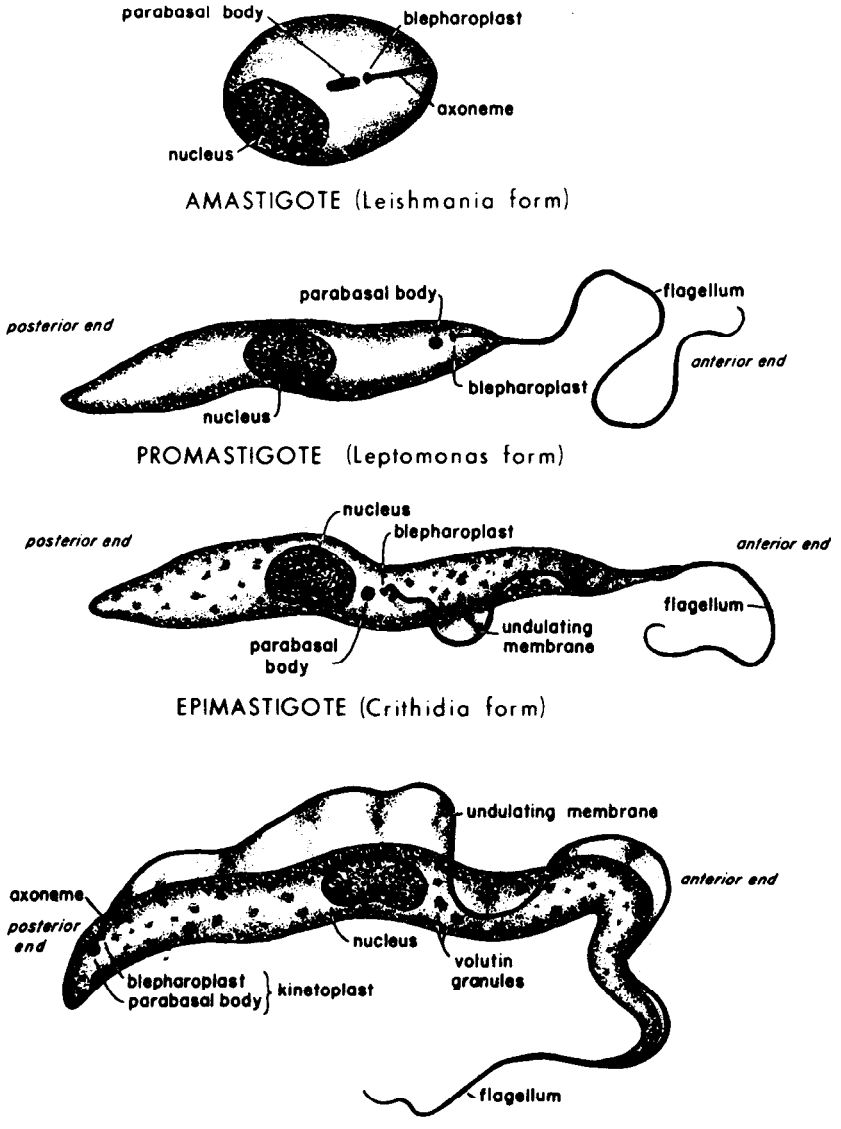


Figure 14. Morphological forms of hemoflagellates. Giemsa's stain. Greatly enlarged.

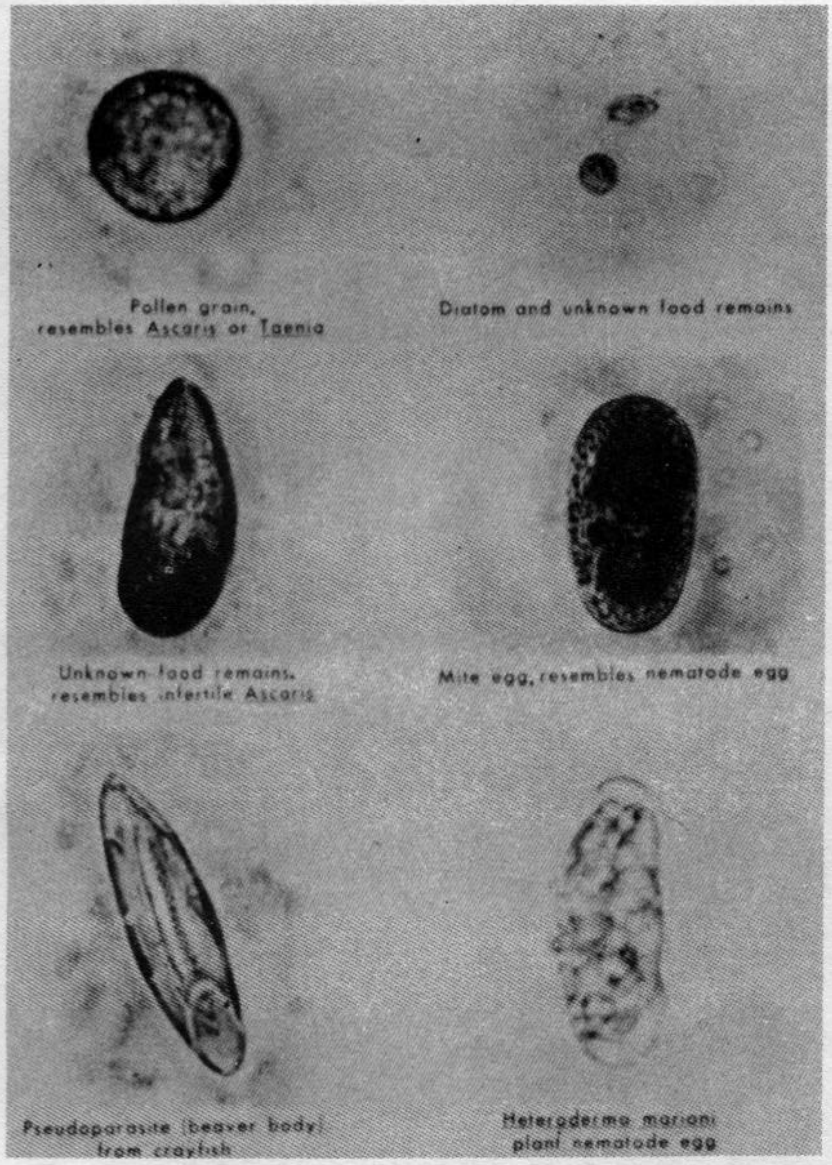


Figure 16. Objects in feces resembling the eggs of the helminths that parasitize humans.

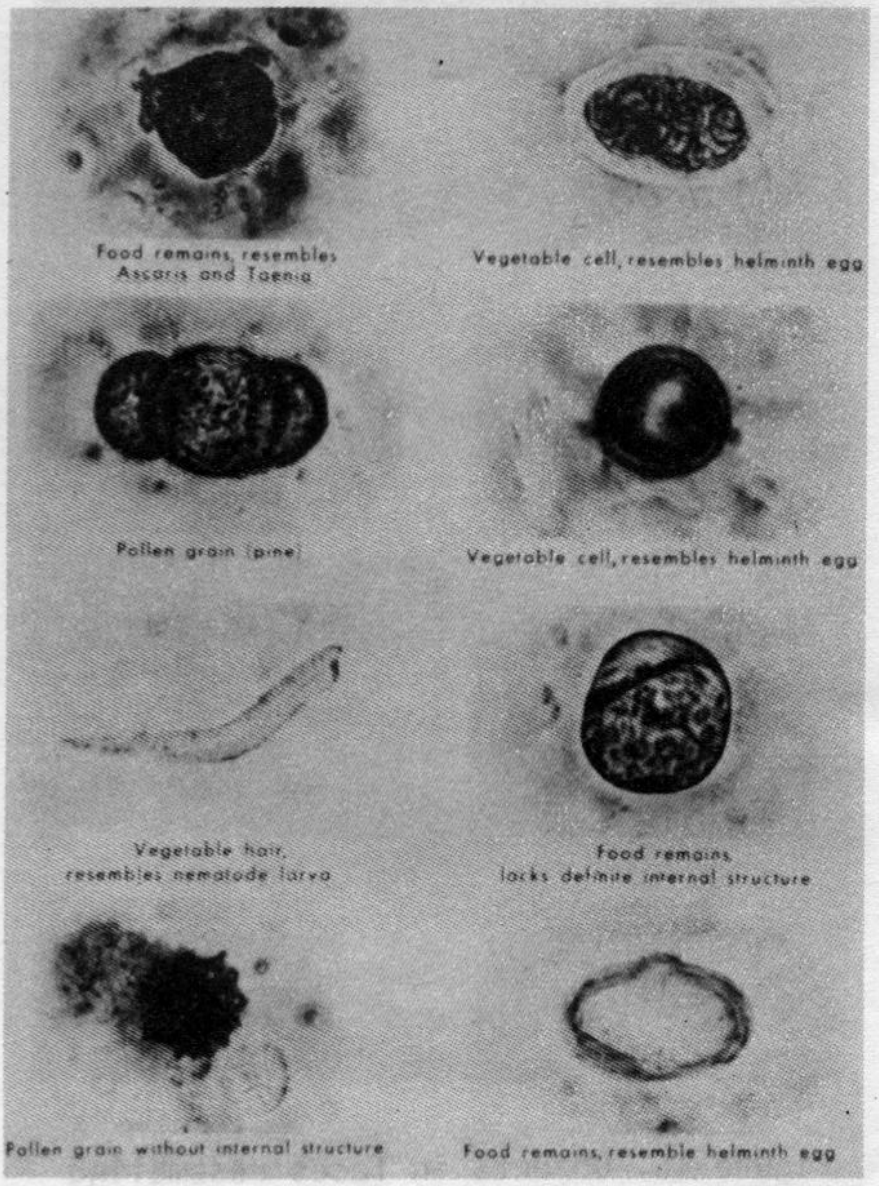
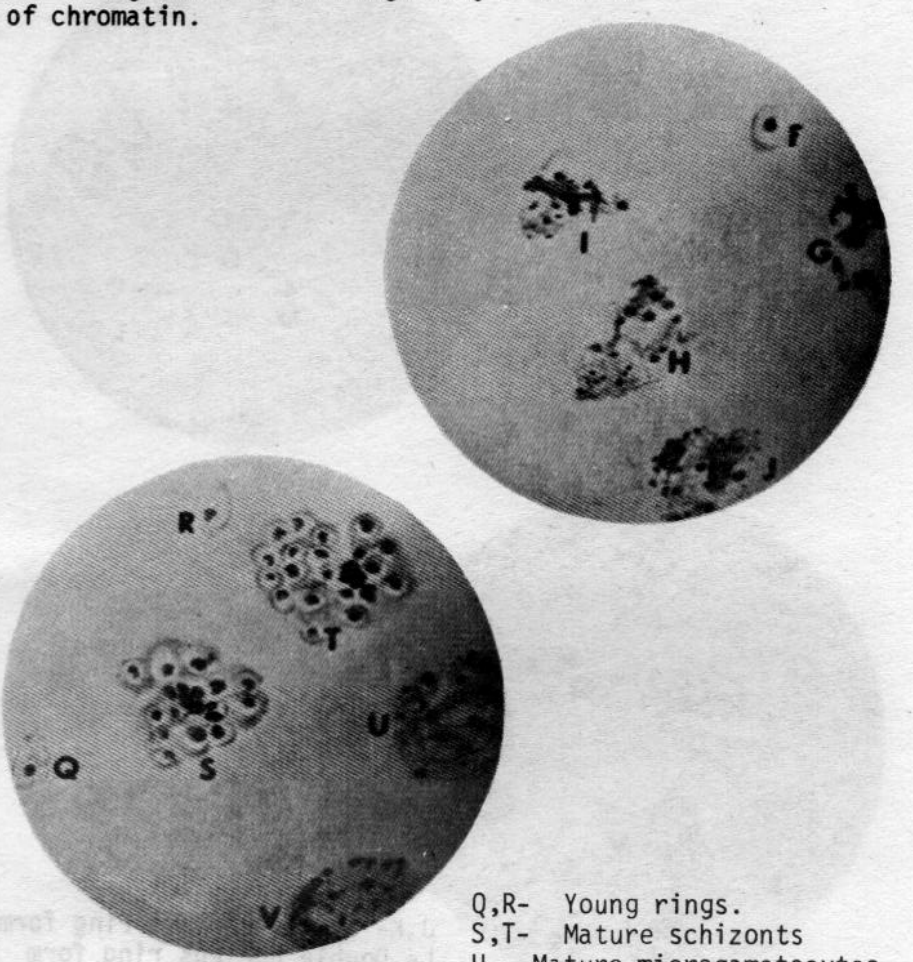


Figure 17. Objects in feces resembling the eggs of the helminths that parasitize humans.

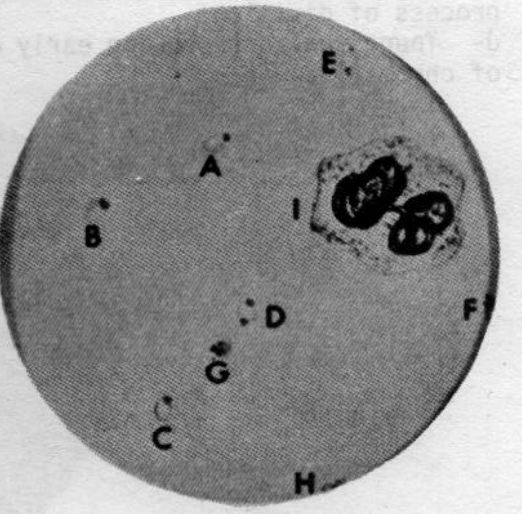
F- Ring stage trophozoite.
G- Older ameboid trophozoite in process of development.
H- Mature trophzoite.
I- Mature trophzoite with chromatin in process of division.
J- Young schizont showing early division of chromatin.

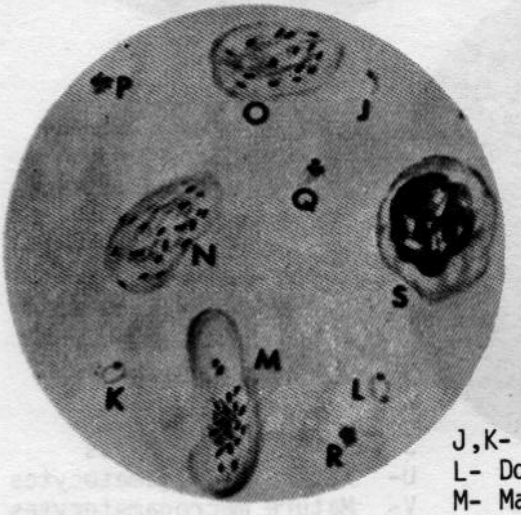


Q,R- Young rings.
S,T- Mature schizonts
U- Mature microgametocytes
V- Mature macrogametocytes

Figure 18. Plasmodium vivax. Giemsa's stain.

A,B,C, - Single nucleus ring forms
D,E - Double nucleus ring forms
F,G,H - Platelets
I- White blood cell

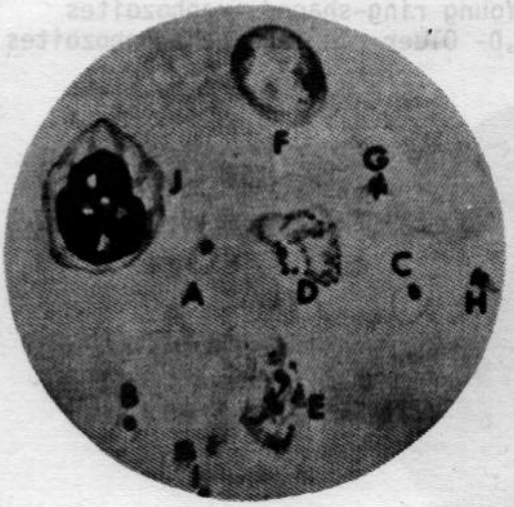




J,K- Single nucleus ring form
L- Double nucleus ring form
M- Mature macrogametocyte

Figure 19. Plasmodium falciparum. Giemsa's Stain.

A,B,C- Ring forms
D,E- Developing trophozoites
F- First stage schizont
G,H,I- Blood platelets
J- White blood cells
K,L,M,N- Ring forms



O,P,- Platelets
Q- Immature schizont
R- Mature schizont
S- Mature macrogametocyte
T- Mature microgametocyte

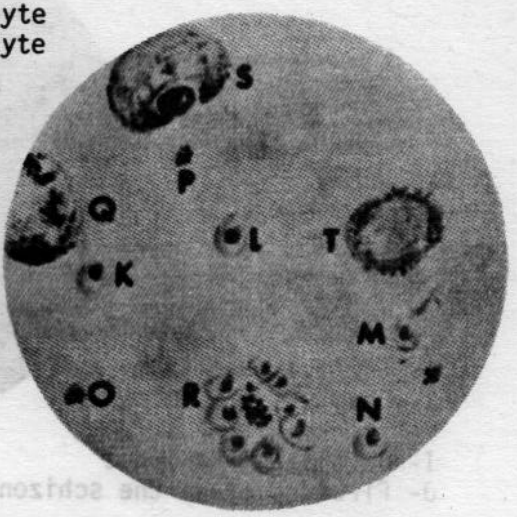
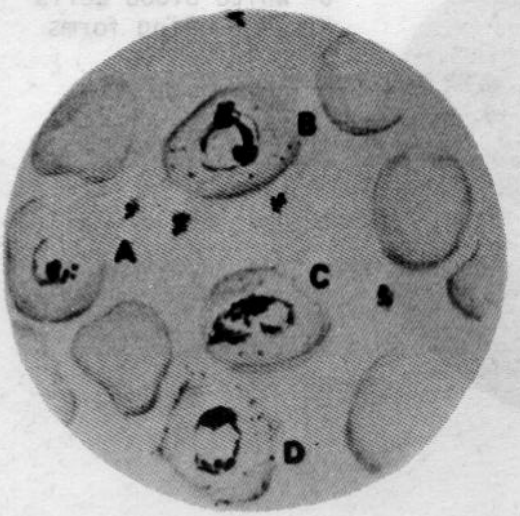
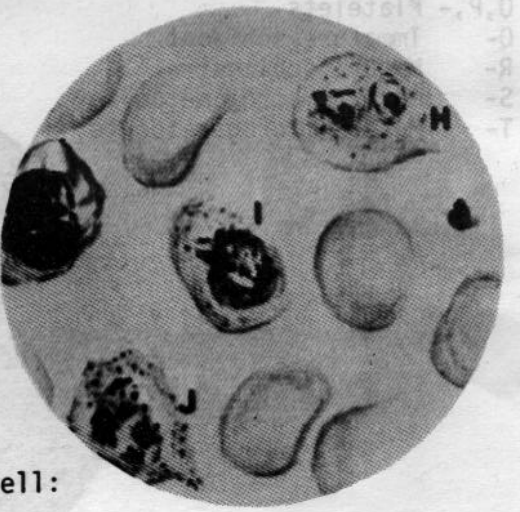


Figure 20. Plasmodium malariae. Giemsa's stain.

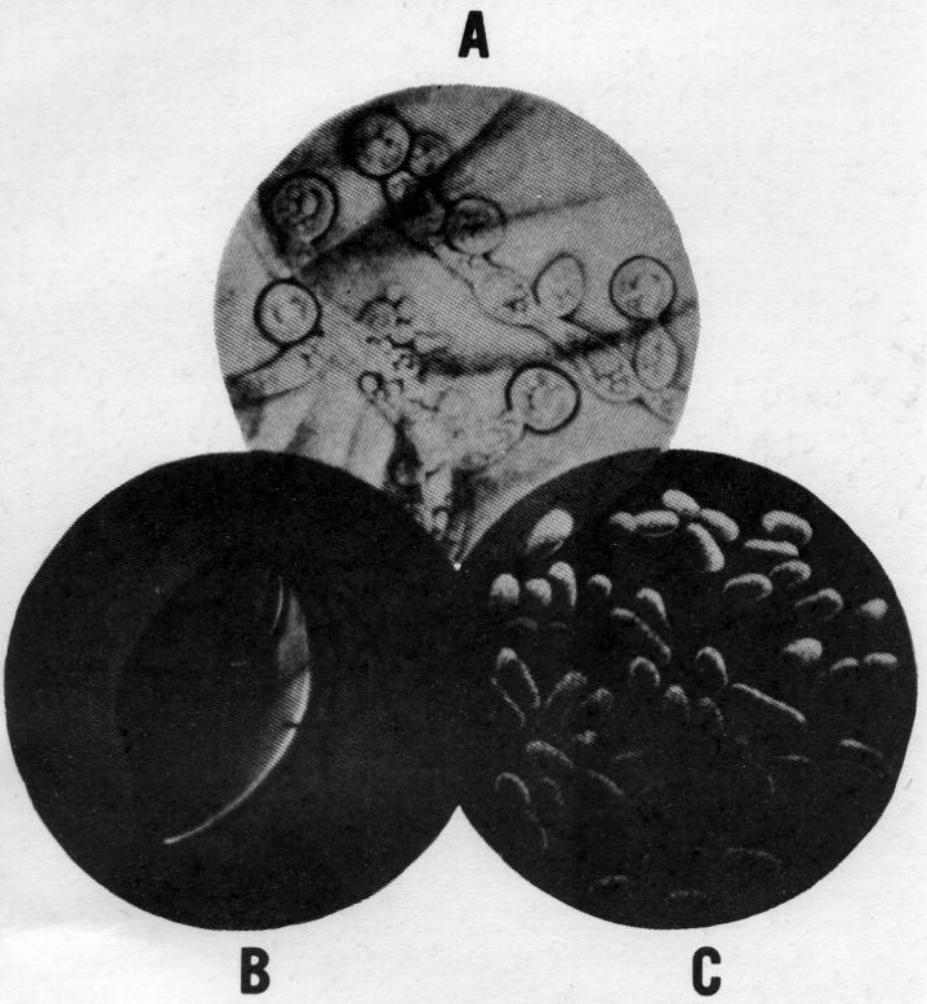
A- Young ring-shaped trophozoites
B,C,D- Older ring-shaped trophozoites





H- Doubly infected cell: trophozoites
I- Developing schizont
J- First stage of the schizont

Figure 21. Plasmodium ovale. Giemsa's stain.



A-Candida albicans mycelia
B-Trichomonas vaginalis
C-Clue Cells,Hemophilus vaginalis

Figure 22. Causative agents of vaginitis.

APPENDIX C

LABORATORY PROCEDURES

C-1. NORMAL VALUES FOR URINE.

Color: Straw - yellow - amber.

Appearance: Clear - hazy - cloudy.

Reaction (pH): 4.6 - 8.

Specific gravity: 1.003-1.030 (for 24-hr specimen, specific gravity will range 1.015-1.025).

If there is a delay in analysis, add 4 drops of formalin to 100 cc. of urine to preserve specimen. Do not use if sugar concentration is to be determined. To obtain specific gravity when an insufficient amount of urine is present to float the weighted meter:

a. Dilute with distilled water and measure specific gravity of dilute mixture.

b. Multiply the numbers after decimal point by total volume of urine and water.

c. Divide by volume of urine diluted.

d. Add 1.

Example: 20 cc. of urine is diluted with 30 cc. of distilled water.

The specific gravity of this diluted mixture is 1.006; therefore, the undiluted urine is $\frac{.006 \times 50}{20} + 1 = 1.015$

C-2. STAINING TECHNIQUES.

a. Gram's stain.

(1) Dry thoroughly (air dry).

(2) Heat fix.

NOTE: Specimen is fixed to slide and may be stained at a later time without deterioration.

(3) Crystal violet (1 min).

(4) Wash with water.

(5) Gram's iodine (1 min).

(6) Wash with water.

(7) Spray with decolorizer (3-5 sec).

(8) Wash with water.

(9) Safranin (30 sec).

(10) Wash with water.

(11) Air dry.

b. Wright's stain.

(1) Air dry slide.

(2) Wright's stain (2 min).

(3) Add D/water (buffer) (4 min).

(4) Wash with water.

(5) Air dry.

NOTE: The times recommended for staining and buffering are approximate and should be adjusted with each fresh batch of stain.

C-3. DIRECT WET SMEAR. In the microscopic examination of fecal specimens for ova and parasites, the most simplified method is the direct wet smear method.

a. Materials needed:

(1) Medicine dropper.

(2) Physiological saline.

(3) Coverslips.

(4) Slides.

(5) Applicator sticks.

b. Technique:

(1) Place 1 drop of saline in center of slide.

(2) Select a small portion of feces and mix on slide with the 1 drop of saline that has been previously placed there.

(3) Add cover slip to the mixture and examine first using low power, then switch to high power for better observation of suspicious objects.

Adding a drop of Lugol's solution to a small portion of feces may be used as a rapid screening technique.

C-4. FORMALIN ETHER SEDIMENTATION METHOD. This method is excellent for recovery of cysts and helminth eggs.

a. Materials and equipment:

(1) Physiologic saline.
(2) Gauze.

(3) Formalin (10%).
(4) Ether.
(5) Applicator sticks.
(6) Slides.
(7) Beaker or specimen container.
(8) Funnel.
(9) Pointed centrifuge tubes.
(10) Stopper for centrifuge tubes.
(11) Coverslips.
(12) Iodine solution.

b. Technique:

(1) Take small portion of feces and mix in 10-12 cc. of saline in a beaker.

(2) Pass mixture through two layers of wet gauze, using funnel, into a pointed centrifuge tube.

(3) Centrifuge for 2 min at 1,500-2,000 rpm.

(4) Pour off supernate and resuspend sediment in fresh saline.

(8) Pour off supernate.

(9) Repeat steps 6 and 7 until supernate is relatively clear.

(10) Add 10 cc. of 10% formalin to sediment.

(11) Mix thoroughly (1 min).

(12) Let stand for at least 10 min.

(13) Add 3 cc. of ether.

(14) Stopper the tube.

(15) Shake vigorously until thoroughly mixed (1 min).

(16) Centrifuge at 1,500 rpm for 2 min.

(Four layers should result in tube: A small amount of sediment containing most of the protozoan cysts and ova, a layer of formalin, a plug of detritus just on top of the formalin, and a topmost layer of ether.)

(17) With applicator stick ream centrifuge tube to loosen fecal plug and pour off supernate.

(18) Quickly decant (pour off) the top three layers leaving the sediment undisturbed.

(19) Swab inside of centrifuge tube to clean all residue to

prevent contaminating sediment when pouring.

(20) Using applicator stick, mix remaining sediment in the tube with fluid that will drain back from the sides.

(21) Place drop on slide, add a drop of iodine, mix thoroughly, add coverslip, and examine using low power.

(22) Switch to high power to confirm findings.

All fecal specimens should be put in MIF solution prior to examinations. This will save space, cut down on stench, and preserve specimen (walnut size portion of specimen is all that is needed for lab findings).

Taking portions of specimen plus 3 times portion of MIF is the proper way to store or send specimen from field.

Formula for MIF: Lugol's solution - 10 parts, formaldehyde - 12.5 parts, tincture merthiolate - 77.5 parts.

Formula for Lugol's solution: Iodine (powdered crystals) 5 gm, potassium iodine (KI) 10 gm, distilled water 100 cc.; mix thoroughly and filter. This solution will remain satisfactory for months.

C-5. "DIXIE CUP" TECHNIQUE.

a. This technique is a variation of the formalin ether sedimentation method. It is faster, materials are a little cheaper, and it is thought to cause less damage to the ova, making them easier to recognize under the microscope. The technique is especially good for making a diagnosis in a low density infestation.

b. Technique:

(1) Add 50 ml. of MIF solution to about 25 ml. of feces.

(2) Stir and filter through two layers of gauze into a small paper cup (Dixie cup).

(3) Let it stand for 5 min and pour off the top layers of fluid, leaving about 10 ml. of material in the cup.

(4) Pour this 10 ml. of material into a test tube and add 3 to 5 ml. of ether.

(5) Centrifuge for 2 min at 1,500 rpm.

(6) Pour off the top layers of fluid (supernatant). Put a drop of the residue on a slide for microscopic examination.

C-6. TUBES ("VACUTAINERS"). Tubes to be used if sending specimens to hospital lab and if the following tubes are available:

a. Gray stopper tube.

(1) Sugar.

(2) Bun.

(3) NPN.

(4) Ammonia.

(5) Iron.

b. Purple stopper tube.

(1) Hematology (W.B.C., etc.).

(2) Alcohol.

(3) Carbon dioxide.

(4) Carbon monoxide.

(5) Oxygen.

c. Red stopper.

All procedures requiring clotted blood.

C-7. STOOL GUAIAC FOR OCCULT BLOOD.

a. Reagents:

(1) Hydrogen peroxide (3%).

(2) Glacial acetic acid.

(3) Saturated solution of gum guaiac in 95% ethyl alcohol.

b. Procedure:

(1) Smear small bit of feces on filter paper.

(2) Add:

(a) 1 drop guaiac solution .

(b) 1 drop glacial acetic acid.

(c) 1 drop hydrogen peroxide.

c. Interpretation of results:

(1) Positive reaction is when a blue or dark green color appears in 30 sec.

(2) Other colors or delayed reaction are regarded as negative.

APPENDIX D

CELLULAR COMPONENTS OF BLOOD, NORMAL VALUES,

AND SIGNIFICANCE OF BLOOD TEST

D-1. ERYTHROCYTES (RED BLOOD CELLS).

a. Erythrocytes comprise the majority of all blood cells; they are chiefly responsible for the color of blood. There are approximately 5 million erythrocytes in 1 cubic mm. of blood.

b. Normal red cell is a biconcave disk; red cell in normal blood has no nucleus.

c. Their principal function is to transport oxygen (accomplished by iron-containing hemoglobin). There are 15 grams of hemoglobin per 100 ml. of blood.

d. Red blood cells are produced in red bone marrow, which also provides most of the blood's leukocytes and all its platelets. Red cells of normal adults are found in short and flat bones--ribs, sternum, skull, vertebrae, bones of the hands and feet.

e. Bone marrow requires a number of nutrients, including iron, vitamin B_{12}, folic acid, and pyridoxine for normal erythropoiesis (formation of red cells).

g. Normal life expectancy of a red cell is between 115 and 130 days. It is then eliminated by phagocytosis in the reticuloendothelial system, predominately in the spleen and liver.

D-2. LEUKOCYTES (WHITE BLOOD CELLS).

a. Leukocytes normally are present in a concentration of between 5,000 and 10,000 cells in each cubic millimeter of blood (1 white cell for every 500-1,000 red cells).

b. Leukocytes have a nucleus and are capable of active movement.

c. Major categories of leukocytes include the granulocytic series, lymphocytes, monocytes, and plasma cells.

d. Leukocytosis--white cell count over 10,000.

e. Leukopenia--white cell count below 5,000.

f. Granulocytes--leukocytes produced in the marrow.

(1) Comprise 70% of all white cells.

(2) Called granulocytes because of the abundant granules contained in their cytoplasm, or polymorphonuclear leukocytes since their nuclei, when mature, are of a highly irregular, multilobed configuration.

g. Lymphocytes--a variety of leukocyte that arises in the thymus

gland and lymph nodes; generally described as nongranular and including small and large varieties.

(1) Responsible for the immunologic competence of an individual.

(2) Comprise about 25 percent of the circulating white cells.

h. Monocytes--derived from components of the reticuloendothelial system (particularly spleen, liver, and lymph nodes).

(1) Constitute a ready source of mobile phagocytes, congregating and performing their scavenging function at sites of inflammation and tissue necrosis.

(2) Account for about 5 percent of the white cell count.

i. Plasmocytes--formed in the lymph nodes and bone marrow.

(1) Are the main and probably sole source of the circulating

(2) Represent approximately 1 percent of the blood leukocytes.

D-3. PLATELETS (THROMBOCYTES).

a. Platelets are the smallest and most fragile of the formed elements; they are small particles (devoid of nuclei) that arise as a result of a fragmentation from giant cells called megakaryocytes in the bone marrow.

b. There are approximately 250,000-500,000 platelets per cubic millimeter of blood.

c. Their prime function is to halt bleeding--accomplished by congregating and clumping at all sites of vascular injury and by plugging with their own substance the lumen of the blood vessels. As they disintegrate they release a constituent (platelet factor 3) that initiates clot formation in their immediate vicinity, thereby checking the flow of blood through the leakage of blood from the lacerated vessel.

d. They cause blood clots to shrink (retract), the effect of which is to draw together the margins of vascular defects, reduce their size, and further stem the leakage.

D-4. HEMATOLOGY NORMAL VALUES.

a. Hematocrit--Men: 39-54%; Women: 36-47%.

b. Hemoglobin--Children: 12-14 gm%; Newborn: 14.5-24.5 gm%.

c. If one counted 100 W.B.C. randomly on a blood smear, the white blood cells present in normal blood, the breakdown would be as follows: Total W.B.C. = 4,500-10,000.

(1)	Segmented neutrophils	45-75%
(2)	Immature band neutrophils	0- 7%
(3)	Lymphocytes	15-35%
(4)	Eosinophils	0- 7%
(5)	Basophils	0- 1%

(6) Monocytes 0-12%

d. Normal platelet counts are usually in the range of 180,000-400,000. A "shift to the left" is a term for an increase over normal in the number of immature or "band" neutrophils. This is usually seen in the early part of an infection. A "shift to the right" refers to preponderance of mature (segmented) neutrophils as seen in the later stages of an infection.

D-5. CAUSES OF EOSINOPHILIA (7% or more).

a. Allergic states: Hay fever, asthma, exfoliative dermatitis, erythema multiforme, and drug reactions.

b. Parasitic diseases: Intestinal forms (hookworm, roundworm) and tissue forms (Toxocara, Trichina, Strongyloides, Echinococcus).

c. Skin disorders: Pemphigus and dermatitis herpetiformis.

d. Neoplasms: Myeloproliferative disorders, Hodgkin's disease, and metastatic carcinoma.

e. Other disorders: Scarlet fever, polyarteritis, eosinophilic granuloma, tropical eosinophilia, and pernicious anemia.

D-6. CAUSES OF NEUTROPHILIA (W.B.C. 10,000 or more).

a. Infection: Due to bacteria (especially pyogenic), mycobacteria, fungi, spirochetes, and parasites. May be localized or generalized.

b. Metabolic disorders: Due to diverse causes resulting in uremia, diabetes, acidosis, gout, and eclampsia.

c. Neoplasms: Usually widely disseminated myeloproliferative disorders, lymphoma, and metastatic carcinoma.

D-7. CAUSES OF NEUTROPENIA (W.B.C. 5,000 or below).

a. Infections: Acute viral (rubeola, hepatitis), rickettsial, bacterial (typhoid, brucella), or protozoan (malaria). All grave infections (bacteremia, miliary tuberculosis).

b. Marrow aplasia: Due to chemical or physical agents that regularly produce aplasia (e.g., benzol, radiation) and other rarer causes (drugs).

c. Nutritional deficits: Folic acid and vitamin B_{12}.

d. Splenomegaly: Due to diverse causes (e.g., congestive, infiltrative).

e. Other disorders: Systemic lupus erythematosus, anaphylaxis, antileukocyte antibodies, immunodeficiencies, pancreatic exocrine deficiency, and cyclic neutropenia (familial and sporadic).

D-8. CAUSES OF LYMPHOCYTOSIS (Lymphocyte count >35%).

a. Acute infection: Infectious mononucleosis, infectious

lymphocytosis, pertussis, mumps, rubella, infectious hepatitis, and the convalescent stage of many acute infections.

b. Chronic infections: Tuberculosis, syphilis, and brucellosis.

c. Metabolic disorders: Thyrotoxicosis and adrenal cortical insufficiency.

d. Neoplasms: Chronic lymphatic leukemia, lymphosarcoma.

D-9. CAUSES OF MONOCYTOSIS.

a. Bacterial infections: Brucellosis, tuberculosis, subacute bacterial endocarditis, and, rarely, typhoid fever.

b. Rickettsial infections: Rocky mountain spotted fever, typhus.

c. Protozoan infections: Malaria.

d. Neoplasms: Monocytic leukemia, Hodgkin's disease and other lymphomas, myeloproliferative disorders, multiple myeloma, and carcinomatosis.

e. Connective tissue disease: Rheumatoid arthritis and systemic lupus erythematosus.

f. Other disorders: Chronic ulcerative colitis, regional enteritis, sarcoidosis, lipid-storage diseases, hemolytic anemia, hypochromic anemia, and recovery from agranulocytosis.

D-10. CAUSES OF BONE MARROW PLASMACYTOSIS.

a. Acute infections: Rubella, rubeola, varicella, infectious hepatitis, infectious mononucleosis, and scarlet fever.

b. Chronic infections: Tuberculosis, syphilis, and fungus.

c. Allergic states: Serum sickness and drug reactions.

d. Collagen-vascular disorders: Acute rheumatic fever, rheumatoid arthritis, and systemic lupus erythematosus.

e. Neoplasms: Disseminated carcinoma, Hodgkin's disease, and multiple myeloma.

f. Other: Cirrhosis of the liver.

APPENDIX E

HISTORY AND PHYSICAL EXAMINATION GUIDE

E-1. OUTLINE OF MEDICAL HISTORY.

a. Identifying data: Name, rank, service number, unit, birthdate, sex, occupation, race, religion, marital status.

b. Chief complaint: Concise statement of primary reason the patient seeks help.

c. Present illness: State of health prior to onset of illness, nature and circumstances of onset, location and nature of pain or discomfort, progression, treatment received and its effect.

d. Past history:

(1) Childhood diseases.

(2) Previous illnesses and injuries.

(3) Previous hospitalization and surgery.

(4) Review of systems.

e. Family history: History of diabetes, hypertension, tuberculosis, etc.

f. Social history: Marital status, occupational data, and habits (tobacco, alcohol, drugs).

E-2. OUTLINE OF PHYSICAL EXAMINATION.

a. Vital signs: Height, weight, blood pressure, pulse, respirations, temperature.

b. General: Posture, emotional state, state of consciousness, acuteness or severity of illness.

c. Integument: Skin, hair, nails.

d. Eyes: Lids, sclera, cornea, conjunctiva, pupil, lens, fundus, ocular mobility, visual acuity.

e. Ears: External ear, canals, tympanic membranes, acuity.

f. Nose: External nose, septum, turbinates, patency.

g. Mouth: Lips, teeth, gingivae, tongue, tonsils, throat, palate, floor of mouth.

h. Neck: Trachea, thyroid, pulses, lymph nodes.

i. Lungs: Chest shape, symmetry, expansion, percussion and auscultation.

j. Heart: Pulse, B.P., color, peripheral perfusion, palpation,

percussion and auscultation.

k. Breasts: Symmetry, masses, tenderness.

l. Abdomen: Inspection, palpation, percussion, auscultation for liver, spleen, kidneys, bladder, hernia, lymph nodes, masses, tenderness, muscle tone, bowel sounds.

m. Genitalia: Penis and testes.

n. Rectum and prostate.

o. Extremities: Strength, range of motion, pulses.

p. Back: Curvature, mobility.

q. Neurological: Cranial nerves, sensory system, motor system, reflexes, mental status, meningeal signs.

APPPENDIX F

FIELD STERILIZATION AND DISINFECTION

1. GENERAL.

a. An article is sterile or not sterile. There is no in-between. If any doubt exists, it is not.

b. All materials to be sterilized must be clean, free from oil, and in good working condition.

c. Wrappers for sterile goods must be double thickness and free from holes.

d. Label packs when packed.

e. Packs should be packaged loosely but securely.

f. Packs are dated when removed from sterilizer and are outdated in 4 weeks (2 weeks if humidity is high).

g. Articles being disinfected by boiling or with chemical solution must be covered by solution and the solution covered.

2. METHODS OF STERILIZATION AND DISINFECTION.

a. Steam under pressure (autoclave).

(1) Method of choice.

(2) Any commercial pressure cooker can be used if an autoclave is not available.

(3) Kills all organisms including spores.

(4) Must reach a minimum of 15 psi and 250°F. (121°C.) for 15 minutes for sterilization. NOTE: If using pressure cooker, maintain approximately 17 psi on gage. This will assure 250°F. minimum temperature.

(5) Allow 30 minutes for instrument packs and linen + 15 minutes for drying, 15 minutes for rubber goods + 15 minutes for drying.

(6) Maximum size for all packs is 12 x 18 inches.

(7) Always use autoclave tape and Diack control if available.

b. Dry heat.

(1) Can be done in an oven.

(2) Used for ointments, oils, waxes and powders; may also be used for glassware, instruments, needles, and dry goods. It is destructive to fabrics.

(3) Time: For oils, ointments, waxes, and powders 120 minutes at 320°F.; for glassware, instruments, needles, and dry goods: 60 minutes at 320°F.

c. Flame (incineration).

(1) Used for materials that can be burned (food, paper, dressings, etc.).

(2) Time: Until completely destroyed.

d. Sunlight.

(1) Use for clothing, bedding, and mattresses.

(2) Time: 6 hours or more in direct sunlight on each side.

e. Chemicals.

(1) Zephiran chloride.

(a) Make 1:750 solution.

(b) Time: 18 hours minimum.

(c) Does not kill spores or tubercle bacilli.

(2) Alcohol.

(a) Make 70% solution.

(b) Time: 18 hours minimum.

(c) Does not kill spores.

(d) Will maintain sterility after sterilization by other methods.

(e) Add 0.5% sodium nitrite to prevent rust of instruments.

(3) Formaldehyde-alcohol solution.

(a) Most active germicidal agent available and will kill spores.

(b) RX.

Ethyl or isopropyl alcohol 99%	700 ml.
Formaldehyde solution U.S.P. 37%	25 ml.
Sodium nitrite	1.0 gm
Sodium bicarbonate	1.0 gm
Distilled water Q.S.ad	1,000 ml.

(c) Time: Metal instruments, 3 hours; catheters, 18-24 hours.

f. Boiling.

(1) Start timing after water comes to boil.

(2) Add 5 minutes time for each 1,000 ft elevation above sea level.

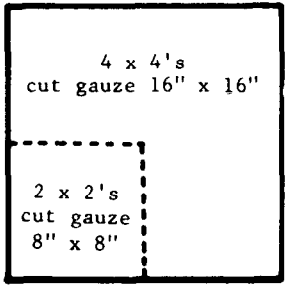
(3) Do not boil blades, scissors, etc., except in emergency (rusts edges).

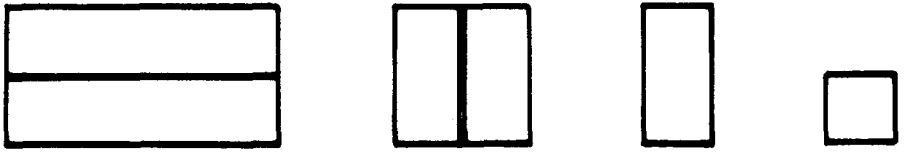
(4) Addition of sodium carbonate to make a 2% solution will increase effectiveness.

(5) Boil for 30 minutes at sea level.

(6) Boiling does not kill spores.

TO MAKE GAUZE FOLDED

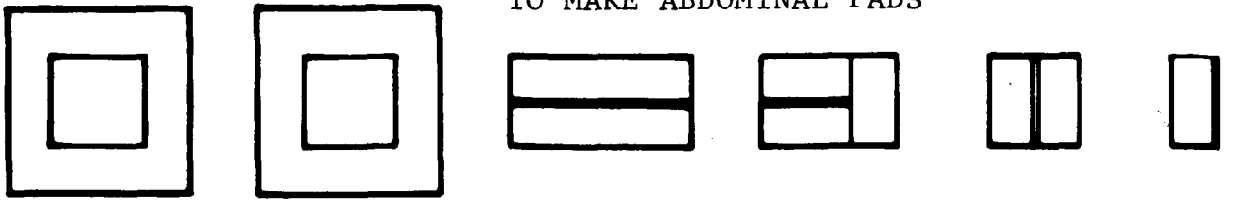




For 4 x 4's fold to 8" x 16" — fold to 8" x 8" — 4" x 8" — 4" x 4"

For 2 x 2's fold to 4" x 8" — fold to 4" x 4" — 2" x 4" — 2" x 2"

TO MAKE ABDOMINAL PADS



Gauze 16" x 16" Cellucotton 8" x 8"

Turn in narrow edge of gauze along left side

Fold upper and lower gauze flaps to center of cotton

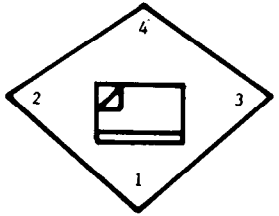
Fold right side of gauze to center of cotton

Fold left side of gauze to center of cotton

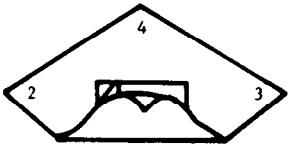
Fold pad in half smooth side inside

PREPARATION OF SURGICAL SUPPLIES

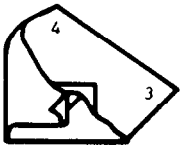
TO WRAP DRY GOODS



Place article to be wrapped on a double muslin or heavy paper



Bring corner (1) up over article; fold back flap



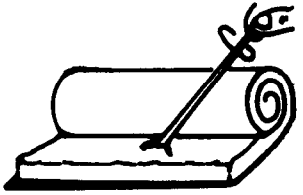
Bring corner (2) up over article; fold back flap

Bring corner (3) up over article; fold back flap

Bring corner (4) up over (3) and tuck under (2) and (3)

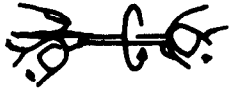
TO MAKE COTTON APPLICATORS

Place several applicator sticks in a small container of water.



Take applicator stick. Pick up small amount of cotton rotating stick.

Smooth cotton over end of stick; be sure tip is covered.



Wind cotton around stick.

PREPARATION OF SURGICAL SUPPLIES(CONT'D)

TO MAKE COTTON BALLS

Take circular piece of cotton

Place piece of cotton in circle formed by index finger and thumb; press in center of cotton.

Moisten tips of index and middle finger, twist top of cotton together between fingers.

PREPARATION OF SURGICAL SUPPLIES(CONT'D)

APPENDIX G

DRUG OF CHOICE CHART

Infecting Organism	Drug of First Choice	Alternative Drugs
I. AEROBIC BACTERIA		
A. Gram-positive cocci		
1. Staphylococci		
a. Nonpenicillinase-producing	Penicillin	Cephalothin, vancomycin, erythromycin, lincomycin.
b. Penicillinase-producing	Penicillinase-resistant penicillin (e.g., methicillin, oxacillin)	Cephalothin, vancomycin, erythromycin, gentamicin, lincomycin.
2. Streptococci		
a. Pyogenic groups A, B, C	Penicillin	Erythromycin, cephalothin, ampicillin.
b. Viridans	Penicillin with or without streptomycin	Ampicillin, vancomycin with or without streptomycin, cephalothin, erythromycin.
c. Enterococci (group D)	Penicillin G with or without streptomycin	Ampicillin, chloramphenicol, tetracycline.
3. Pneumococcus (streptococcus pneumoniae)	Penicillin	Erythromycin, cephalothin.
B. Gram-negative cocci		
1. Neisseria catarrhalis	Penicillin	Tetracycline.
2. Neisseria gonorrhoeae	Penicillin	Tetracycline, ampicillin, spectinomycin.
C. Gram-negative bacilli		
1. Escherichia coli	Ampicillin, cephalothin	Kanamycin, tetracycline, gentamicin, chloramphenicol.
2. Aerobacter (Enterobacter) aerogenes	Kanamycin	Tetracycline with or without streptomycin, gentamicin.
3. Klebsiella species	Cephalothin	Kanamycin, polymyxin, chloramphenicol.
4. Pseudomonas aeruginosa	Gentamicin	Colistin, polymyxin, carbenicillin.
5. Proteus		
a. P. mirabilis	Ampicillin	Kanamycin, cephalothin, gentamicin.
b. Other Proteus	Kanamycin	Nalidixic acid, cephalothin, carbenicillin, gentamicin.

Infecting Organism	Drug of First Choice	Alternative Drugs
6. Serratia species	Gentamicin	Kanamycin, chloramphenicol.
7. Alcaligenes faecalis	Chloramphenicol or tetracycline	Penicillin G.
8. Salmonella typhi	Chloramphenicol	Ampicillin, cephalothin.
9. Hemophilus species		
a. H. influenzae	Ampicillin	Tetracycline, cephalothin.
b. H. ducreyi	Tetracycline	Sulfonamides, streptomycin.
10. Brucella species	Tetracycline	Chloramphenicol.
11. Pasteurella species		
a. P. tularensis	Streptomycin	Tetracycline.
b. P. pestis	Tetracycline	Streptomycin.
D. Gram-positive bacteria		
1. Bacillus anthracis	Penicillin	Erythromycin, tetracycline.
2. Corynebacterium species	Erythromycin	Penicillin.
3. Diphtheroid species	Penicillin	Ampicillin, erythromycin.
4. Mycobacterium tuberculosis	Isoniazid with or without streptomycin, with or without para-aminosalicylic acid or ethambutol.	Pyrazinamide, cycloserine, ethionamide, viomycin, kanamycin, capreomycin, erythromycin.
5. Listeria monocytogenes	Erythromycin	Penicillin.
II. MICROAEROPHILIC BACTERIA		
A. Gram-positive cocci		
1. Streptococci		
a. Hemolytic	Penicillin G	Ampicillin, tetracycline, chloramphenicol.
b. Nonhemolytic	Penicillin G	Ampicillin, tetracycline, chloramphenicol.
III. ANAEROBIC BACTERIA		
A. Gram-positive cocci		
1. Streptococcus species	Penicillin G	Ampicillin, tetracycline, chloramphenicol.
B. Gram-positive bacilli		
1. Clostridium species		
a. C. perfringens	Penicillin G and tetracycline	Cephalothin, erythromycin.
b. C. novyi	Penicillin G	Tetracycline, cephalothin.
c. C. histolyticum	Penicillin G	Tetracycline, cephalothin.
d. C. septicum	Penicillin G	Tetracycline, cephalothin.

Infecting Organism	Drug of First Choice	Alternative Drugs
e. C. sordellii	Penicillin G	Tetracycline, cephalothin.
f. C. sporogenes	Penicillin G	Cephalothin, tetracycline.
g. C. tetani	Penicillin G	Cephalothin, tetracycline.
C. Bacteroides species	Tetracycline with sulfadiazine	Chloramphenicol, Vibramycin.
IV. MISCELLANEOUS		
A. Actinomyces bovis	Penicillin G	Sulfadiazine.
B. Nocardia species	Sulfadiazine	Penicillin G.
C. Fusobacterium fusiforme	Penicillin	Tetracycline, erythromycin.
D. Calymmatobacterium granulomatis	Tetracycline	Streptomycin.
V. ACID FAST BACILLI		
A. Mycobacterium tuberculosis	Isoniazid with rifampin	Ethambutol; streptomycin; para-aminosalicylic acid (PAS); pyrazinamide; cycloserine; ethionamide; kanamycin; capreomycin.
B. Mycobacterium kansasii	Isoniazid with rifampin, with or without ethambutol	Streptomycin; an erythromycin; ethionamide; cycloserine; amikacin.
C. Mycobacterium aviumintracellulare complex	Isoniazid, rifampin, ethambutol, and streptomycin	Amikacin; ethionamide; cycloserine.
D. Mycobacterium fortuitum	Amikacin	Rifampin; doxycycline.
E. Mycobacterium marinum (balnei)	Minocycline	Rifampin.
F. Mycobacterium leprae (leprosy)	Dapsone with or without rifampin	Acedapsone; rifampin; clofazimine.
VI. ACTINOMYCETES		
A. Actinomyces israelii (actinomycosis)	Penicillin G	A tetracycline.
B. Nocardia	Trisulfapyrimidines	Trimethoprim-sulfamethoxazole; trisulfapyrimidines with minocycline or ampicillin or erythromycin; cycloserine.
VII. CHLAMYDIA		
A. Chlamydia psittaci (psittacosis; ornithosis)	A tetracycline	Chloramphenicol.

Infecting Organism	Drug of First Choice	Alternative Drugs
B. Chlamydia trachomatis		
1. (Trachoma)	A tetracycline (topical plus oral)	A sulfonamide (topical plus oral).
2. (Inclusion conjunctivitis)	An erythromycin	A tetracycline; a sulfonamide.
3. (Pneumonia)	An erythromycin	A sulfonamide.
4. (Urethritis)	A tetracycline	An erythromycin.
C. Lymphogranuloma venereum	A tetracycline	An erythromycin; a sulfonamide.
VIII. FUNGI		
A. Aspergillus	Amphotericin B	No dependable alternative.
B. Blastomyces dermatitidis	Amphotericin B	Hydroxystilbamidine.
C. Candida species	Amphotericin B with or without flucytosine	Nystatin (oral or topical); miconazole; clotrimazone (topical).
D. Chromomycosis	Flucytosine	No dependable alternative.
E. Coccidioides immitis	Amphotericin B	Miconazole.
F. Cryptococcus neoformans	Amphotericin B with or without flucytosine	No dependable alternative.
G. Dermatophytes (tinea)	Clotrimazole (topical) or miconazole (topical)	Tolnaftate (topical); haloprogin (topical) griseofulvin.
H. Histoplasma capsulatum	Amphotericin B	No dependable alternative.
I. Mucor	Amphotericin B	No dependable alternative.
J. Paracoccidioides brasiliensis	Amphotericin B	A sulfonamide; miconazole.
K. Sporothrix schenckii	An iodide	Amphotericin B.
IX. MYCOPLASMA		
Mycoplasma pneumoniae	An erythromycin or a tetracycline	
X. RICKETTSIA - Rocky Mountain spotted fever; endemic typhus (murine); tick bite fever; typhus, scrub typhus; Q fever	A tetracycline	Chloramphenicol.
XI. PNEUMOCYSTIS CARINII	Trimethoprim-sulfamethoxazole	Pentamidine.
XII. SPIROCHETES		
A. Borrelia recurrentis (relapsing fever)	A tetracycline	Penicillin G.
B. Leptospira	Penicillin G	A tetracycline.
C. Treponema pallidum (syphilis)	Penicillin G	A tetracycline; an erythromycin.
D. Treponema pertenue (yaws)	Penicillin G	A tetracycline.

Infecting Organism	Drug of First Choice	Alternative Drugs
XIII. VIRUSES		
A. Herpes simplex (keratitis)	Vidarabine (topical)	Idoxuridine (topical).
B. Herpes simplex (encephalitis)	Vidarabine	No alternative.
C. Influenza A	Amantadine	No alternative.
D. Vaccinia	Methisazone with or without vaccinia immune globulin	No alternative.