

Contents

1	Identification of Gram-positive microorganisms.....	3
1.1	Microbiological identification of Streptococcus species.....	3
1.2	Microbiological identification of Enterococcus species.....	6
1.3	Microbiological identification of Staphylococcus species.....	7
1.4	Microbiological identification of Corynebacterium species.....	9
2	Identification of Gram-negative microorganisms.....	13
2.1	Microbiological identification of fermenting Gram-negative rods (family Enterobacteriaceae).....	13
2.2	Microbiological identification of nonfermenting Gram-negative rods.....	15
2.3	Microbiological identification of fastidious Gram-negative bacteria.....	17
3	Identification of anaerobic bacteria.....	21
3.1	Non-sporing anaerobic bacteria.....	21
3.2	Spore-forming anaerobic bacteria.....	22
3.3	Spiral-shaped, motile microorganisms.....	23
3.4	Identification of anaerobic bacteria.....	23
4	Identification of fungi.....	30
4.1	The specimens subject to the mycology study.....	30
4.2	Microscopic examination of specimens.....	30
4.3	Cultivation of specimens.....	31
4.4	Identification of fungal cultures.....	31
4.4.1	Identification of moulds.....	32
4.4.2	Identification of yeasts.....	33
4.5	Serological methods.....	35
5	Identification of parasites.....	38
5.1	Techniques of stool examinations.....	38
5.2	Perianal specimens.....	39
5.3	Urogenital parasitic infections.....	40
5.4	Blood and tissue parasitic infections.....	40
5.5	Serological investigation.....	40
6	Identification of viruses.....	43
6.1	Collection, transport and processing of specimens.....	43
6.2	Diagnosis of viral infections.....	43
6.2.1	Viral culture.....	43
6.2.2	Propagation in chick embryos.....	44
6.2.3	Viral serology - determination of viral antibodies.....	44
6.2.4	Influenza disease.....	46

7	Differential microbiological diagnosis.....	49
7.1	Pathogenesis of bacterial infection.....	50
7.2	The infectious process	51
7.3	Upper respiratory tract infections	54
7.4	Lower respiratory tract infections	56
7.5	Urinary tract infections	57
7.6	Gastrointestinal tract infections	57
7.6.1	Bacterial causes of diarrhea.....	61
7.6.2	Viral causes of diarrhea	61
7.6.3	Parasites and the gastrointestinal tract.....	61
7.7	Central nervous system infections.....	62
7.8	Infections in immunocompromised patients.....	64
7.9	Perinatal infections	64
7.10	Sexually transmitted diseases.....	65
7.10.1	Bacterial STDs.....	66
7.10.2	Viral STDs.....	67
7.10.3	Parasitic STDs	67
7.10.4	Candida infections	67
7.11	Hospital-acquired (nosocomial) infections.....	72
8	Strategies of antibiotic therapy	72
8.1	Microbial resistance to antibiotics.....	75
8.2	Guidelines for antibiotic use	78
8.3	Influence of selective pressure of antibiotics on the development of bacterial resistance	78