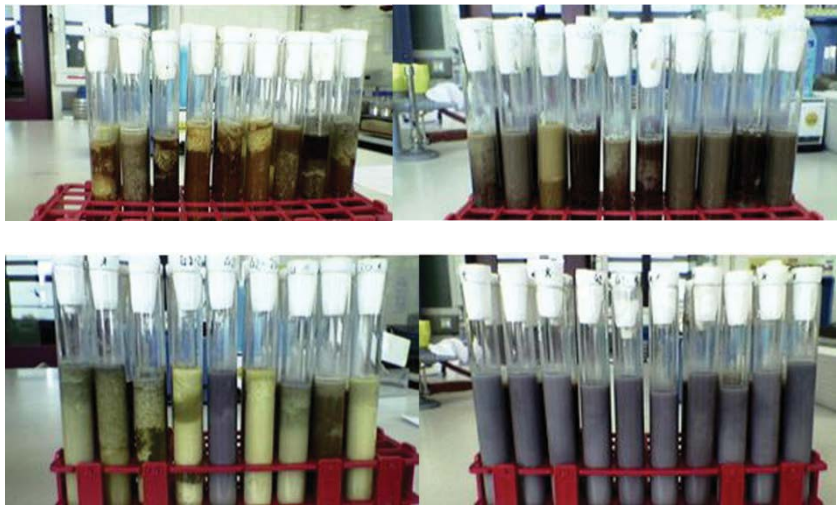

Figure 3.2 (a) Several C. perfringens strains in RPM (positive reaction left with coagulation and formation of a curd due to the fermentation of lactose and casein in Crossley milk by bacterial enzymes; negative reaction right). (b) Several C. perfringens strains in RCM (positive reaction left with coagulation of proteins in the Crossley milk acidification due to fermentation of lactose by bacterial enzymes, visible as colour change of the pH indicator bromocresol purple from purple to pale yellow; negative reaction right).

Figure 4.2 Colony morphology of strains affiliated to the B. cereus group on CEI (upper row), on PEMBA (middle row), and on Columbia blood agar (bottom row). Plates were incubated for 20 h at 36 °C.

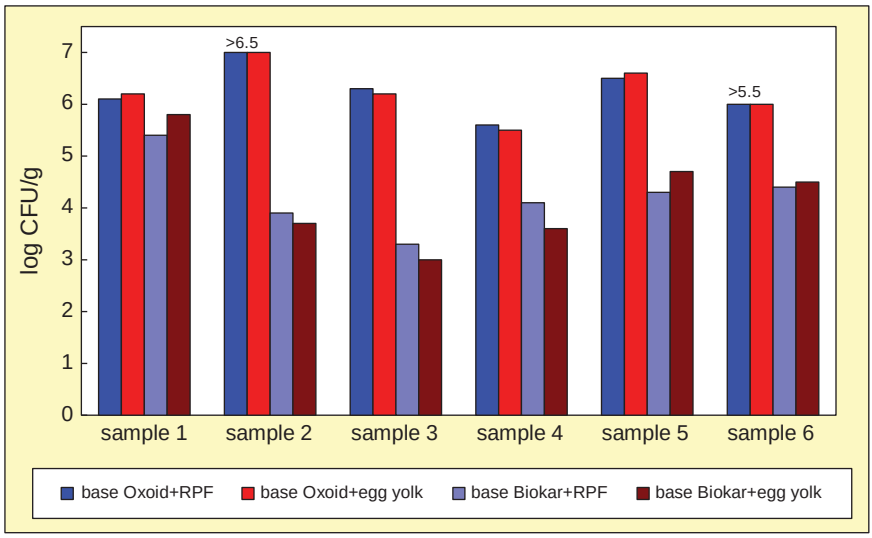

Figure 6.1 Influence of agar base brands on total CFU of BPA and RPFA (log CFU/g of six cheeses made from raw milk, 48 h at 37 °C) (Zangerl, 1999).

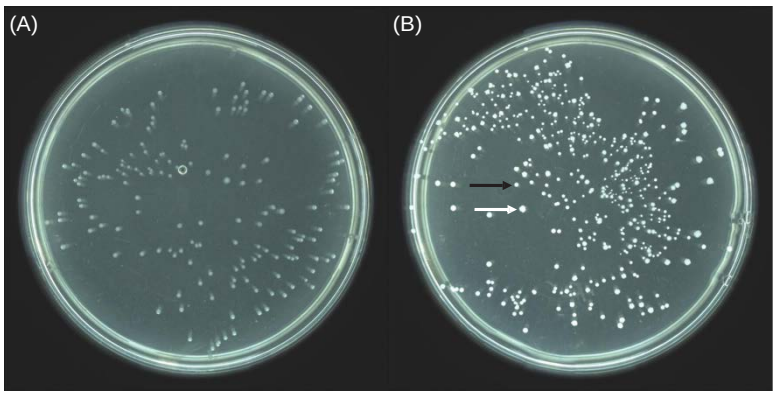

Figure 10.2 Digital image of Bifidobacterium spp. on TPY extract agar. (A) Bifidobacterium bifidum NCIMB 700795 incubated anaerobically at 37 °C for 72 h on TPY extract agar plates. (B) Bifidobacterium breve YIT 4052 and Lactobacillus delbrueckii ssp. bulgaricus CH1 incubated anaerobically at 37 °C for 72 h on TPY extract agar plates. The black arrow indicates Bifidobacterium breve YIT 4052; the white arrow indicates Lactobacillus delbrueckii ssp. bulgaricus CH1. Colony identifications were confirmed by microscopy.

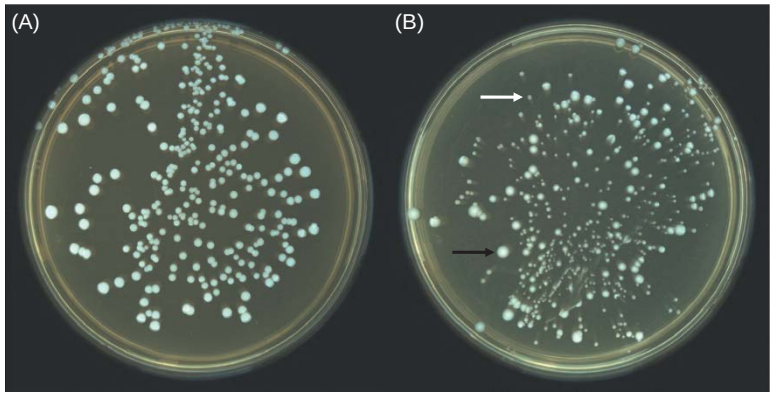

Figure 10.3 Digital image of Bifidobacterium spp. on cys-MRS agar. (A) Bifidobacterium breve YIT 4052 incubated anaerobically at 37 ℃ for 72 h on cys-MRS agar plates. (B) Bifidobacterium adolescentis NCIMB 702230 and Lactococcus lactis DRC3 incubated anaerobically at 37 ℃ for 72 h on cys-MRS agar plates. The black arrow indicates Bifidobacterium adolescentis NCIMB 702230; the white arrow indicates Lactococcus lactis DRC3. Colony identifications were confirmed by microscopy.

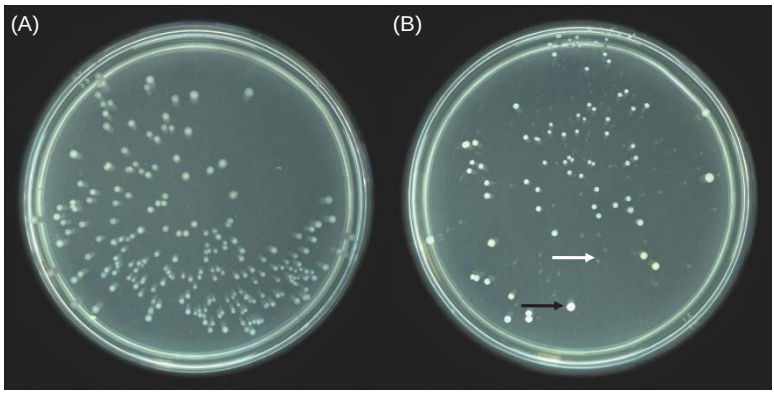

Figure 10.4 Digital image of Bifidobacterium spp. on RCA. (A) Bifidobacterium adolescentis NCIMB 702230 incubated anaerobically at 37 ℃ for 72 h on RCA plates. (B) Bifidobacterium longum NCIMB 708809 and Lactobacillus johnsonii DSM10533 incubated anaerobically at 37 ℃ for 72 h on RCA plates. The black arrow indicates Bifidobacterium longum NCIMB 708809; the white arrow indicates Lactobacillus johnsonii DSM10533. Colony identifications were confirmed by microscopy.

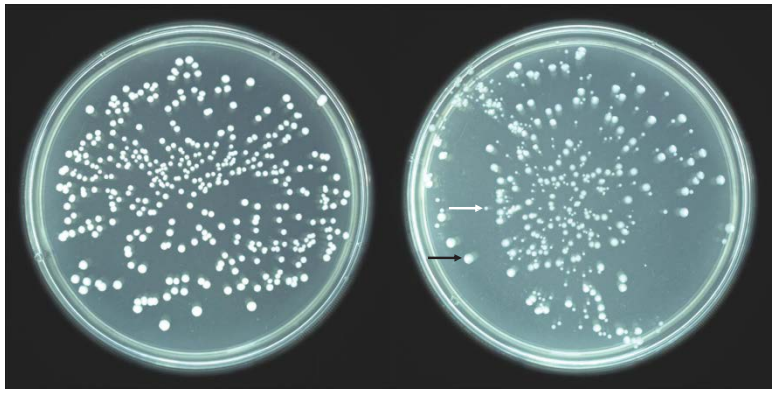

Figure 10.5 Digital image of Bifidobacterium spp. on TOS propionate agar. (A) Bifidobacterium breve YIT 4052 incubated anaerobically at 37 ℃ for 72 h on TOS propionate agar plates. (B) Bifidobacterium adolescentis NCIMB 702230 and Lactococcus lactis DRC3 incubated anaerobically at 37 ℃ for 72 h on TOS propionate gar plates. The black arrow indicates Bifidobacterium adolescentis NCIMB 702230; the white arrow indicates Lactococcus lactis DRC3. Colony identifications were confirmed by microscopy.

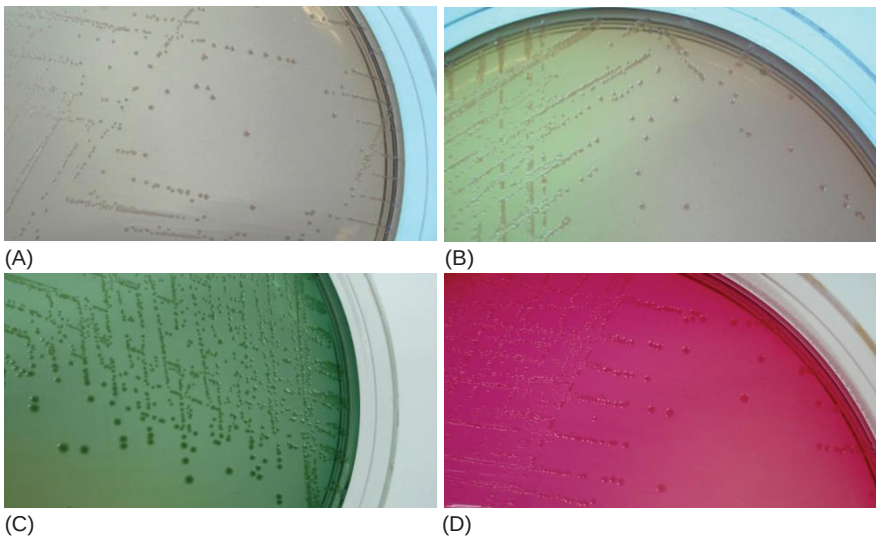

Figure 14.1 Appearance of Shigella flexneri colonies on: (A) MacConkey agar; (B) Salmonella Shigella (SS) agar; (C) Hektoen enteric (HE) agar; and (D) xylose lysine deoxycholate (XLD) agar plates.

(a)

(b)

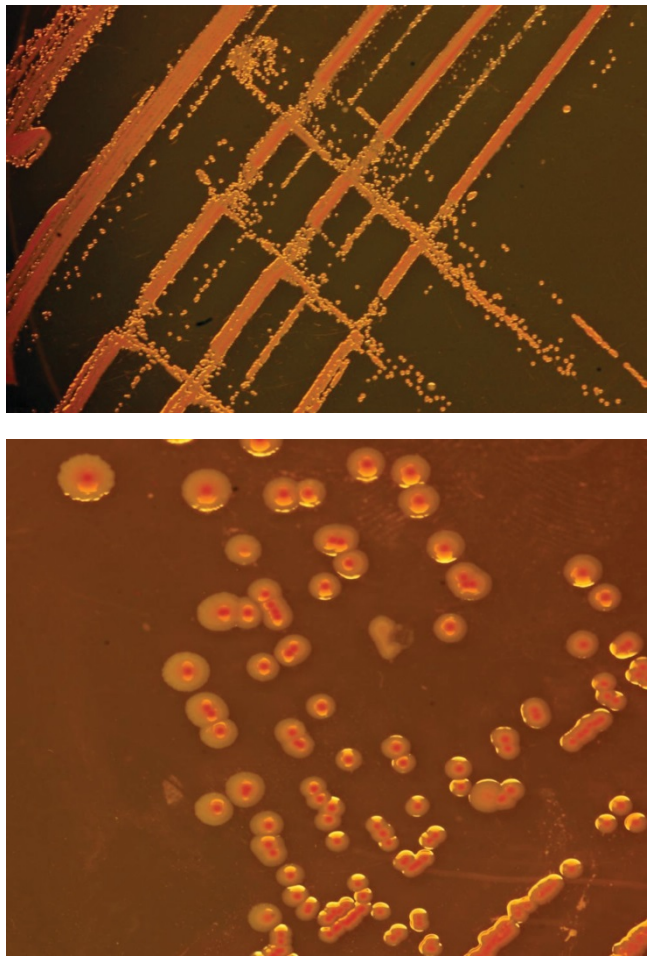

Figure 15.1 Pathogenic Y. enterocolitica from pig tonsils, grown on CR-BHO (Congo red brain heart infusion agarose) at 37 °C. Red pin-point colonies after 24 h (top); larger colonies with red centre and pale periphery after 48 h (bottom) (from Mylona, 2004).

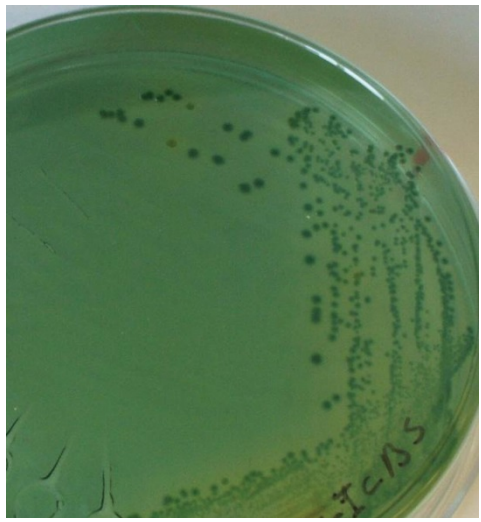

Figure 18.1 TCBS agar showing typical sucrose-negative colonies, as seen with V. parahaemolyticus and V. vulnificus, following overnight incubation at 37 ℃.

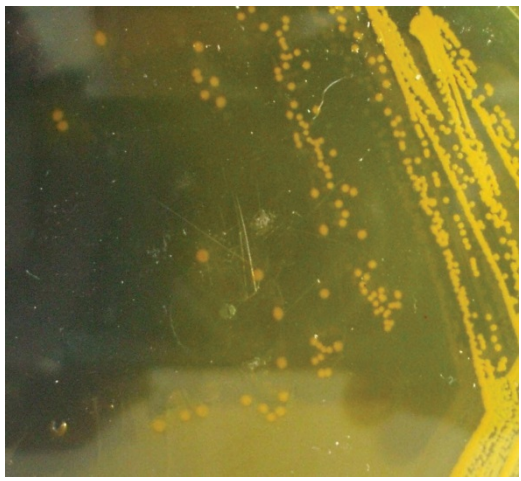

Figure 18.2 CPC agar showing cellobiose-positive colonies, as seen with V. vulnificus following overnight incubation at 40 ℃.

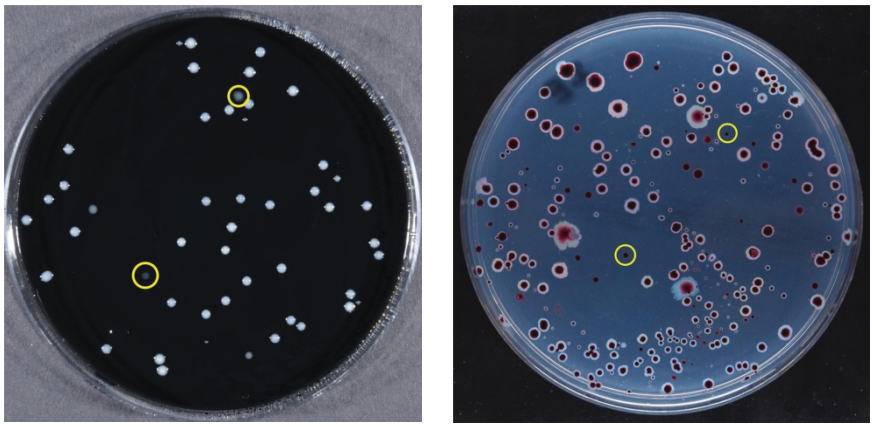

Figure 19.1 Colonies (circled) on (left) modified cefoperazone charcoal deoxycholate agar (mCCDA) and (right) Oxoid Brilliance agar. The inoculum was 200 mL of a 1:1 suspension of chicken neckskin in MRD (maximum recovery diluent), surface spread, incubated at 41.5 °C for 48 h.

Figure 23.1 Aspergillus flavus colonies on malt extract agar; 7 days at 25 °C. Photograph was provided by Dr Robert A. Samson, CBS–KNAW Fungal Diversity Centre, Utrecht, The Netherlands.

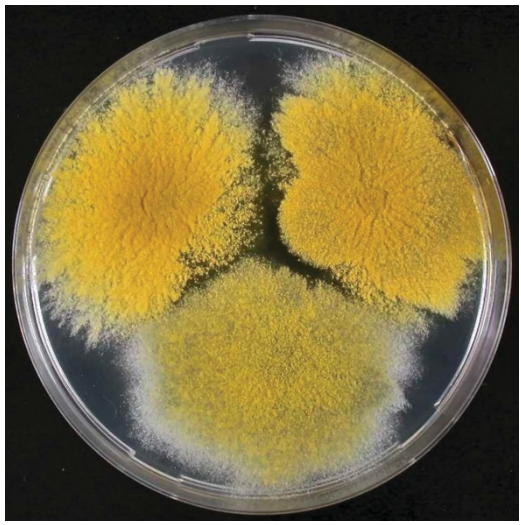

Figure 23.2 Eurotium chevalieri on Czapek yeast agar plus 40% sucrose; 7 days at 25 ℃. Photograph was provided by Dr Robert A. Samson, CBS–KNAW Fungal Diversity Centre, Utrecht, The Netherlands.

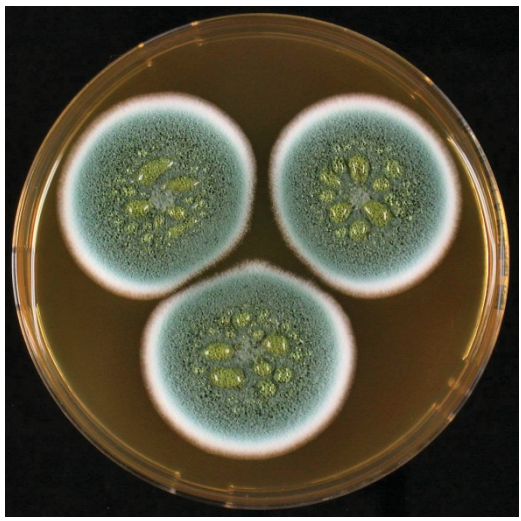

Figure 23.3 Penicillium chrysogenum on malt extract agar; 7 days at 25 ℃. Photograph was provided by Dr Robert A. Samson, CBS–KNAW Fungal Diversity Centre, Utrecht, The Netherlands.

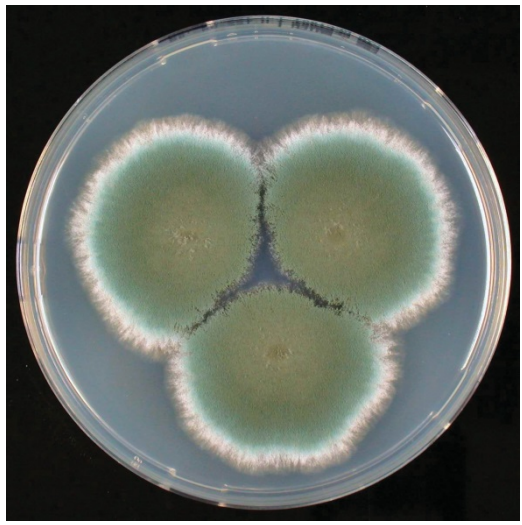

Figure 23.4 Penicillium roqueforti on Czapek yeast agar; 7 days at 25 °C. Photograph was provided by Dr Robert A. Samson, CBS–KNAW Fungal Diversity Centre, Utrecht, The Netherlands.

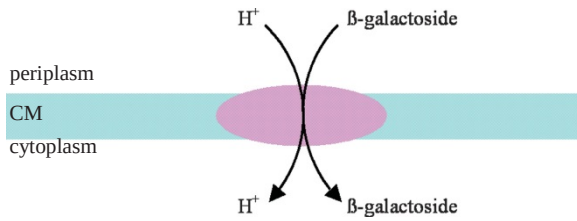

Figure 26.4 A schematic diagram of the b-galactoside/H^{1} symport and transport across the cytoplasmic membrane (CM) of coliforms.

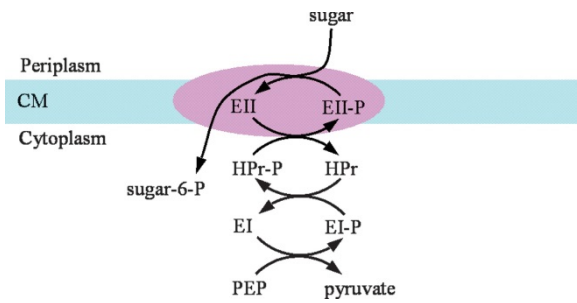

Figure 26.5 Schematic diagram of sugar transport by the phosphotransferase system (PTS) across the cytoplasmic membrane (CM) of Gram-negative bacteria. EI, enzyme I; EII, enzyme II; HPr, histidine protein.

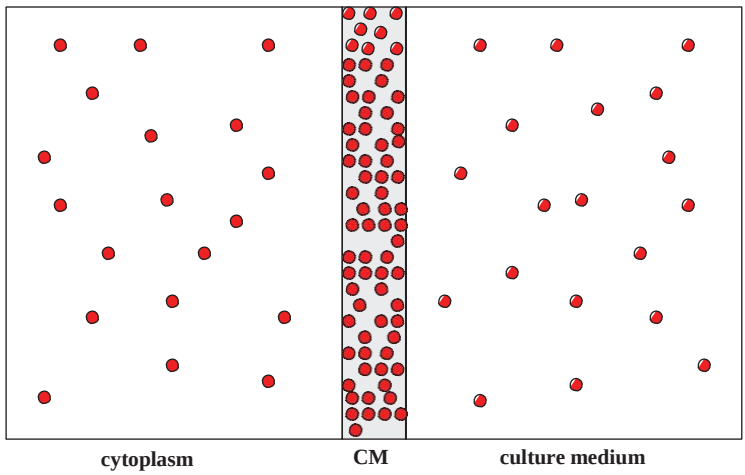

Figure 26.6 Fluorogen hydrolysis and passive diffusion of the fluorophore across the cytoplasmic membrane (CM) and into the culture medium.

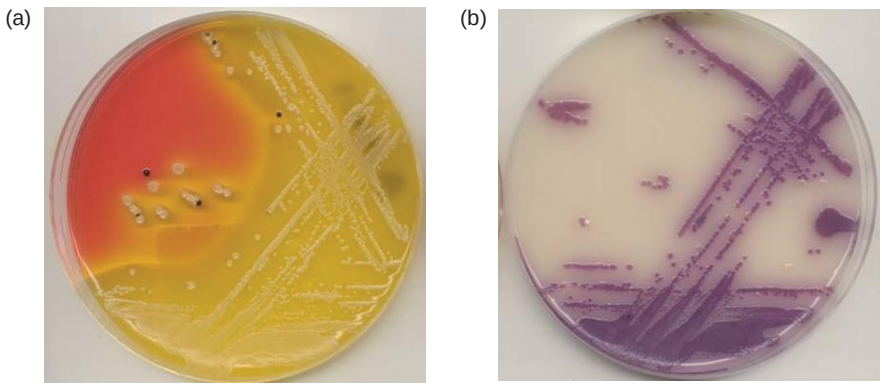

Figure 26.8 A minced beef sample spiked with Salmonella enterica Typhimurium that has been put through the pre-enrichment and enrichment steps of ISO 6759:2002 and streaked on to XLD and Oxoid Brilliance Salmonella medium containing a Trojan horse. (a) XLD medium: presumptive salmonellae produce black colonies; (b) Brilliance Salmonella medium: presumptive salmonellae produce purple colonies.

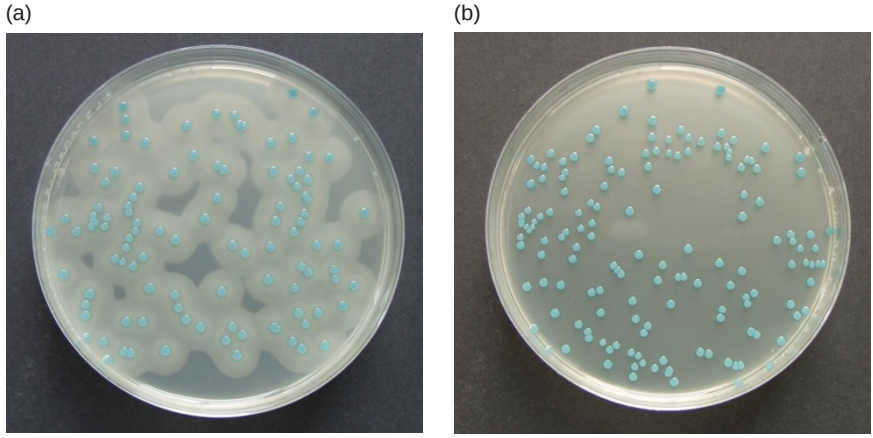

Figure P1 (a) L. monocytogenes on ALOA agar; (b) L. innocua on ALOA agar (Reproduced by kind permission of Merck).

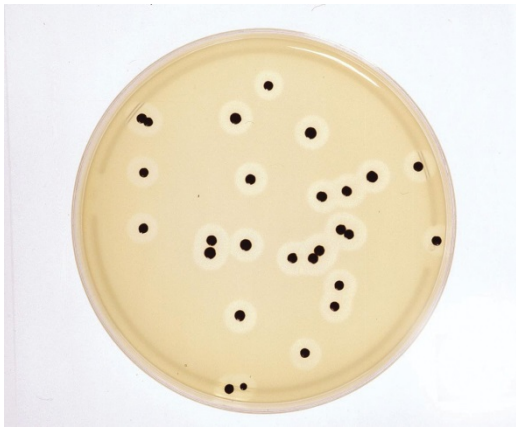

Figure P2 Staphylococcus aureus on Baird-Parker agar; 37 ℃, 24 h (Reproduced by kind permission of bioMerieux).

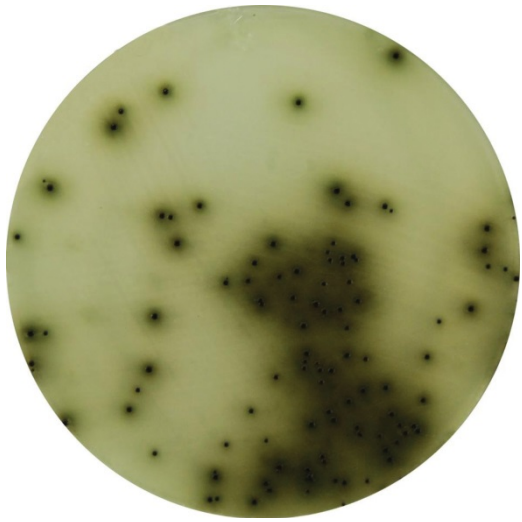

Figure P3 Salmonella Typhimurium on bismuth sulfite agar (Reproduced by kind permission of Laboratorios Conda).

Figure P4 Legionella sp. on buffered charcoal yeast extract (BCYE) agar (Reproduced by kind permission of Thermo Fisher, Oxoid Division).

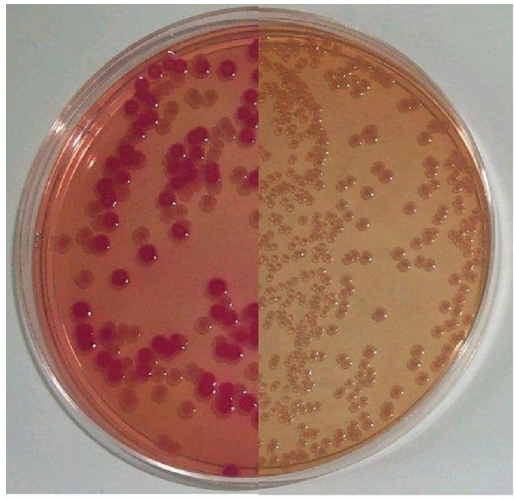

Figure P5 CT-SMAC (cefixime tellurite sorbitol MacConkey) agar, 37 ℃, 24 h. Left: mixture of E. coli strains. Right: sorbitol-negative presumptive E. coli O157 colonies (after immunomagnetic separation). (Reproduced by kind permission of Thermo Fisher, Oxoid Division).

Figure P6 Yersinia enterocolitica on cefsulodin Irgasan novobiocin (CIN) agar (Reproduced by kind permission of Laboratorios Conda).

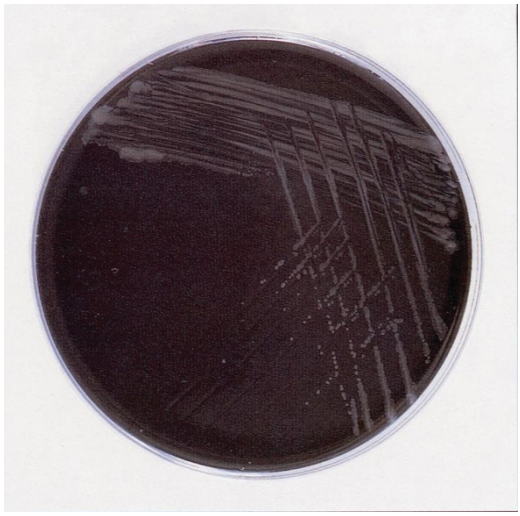

Figure P7 Campylobacter jejuni on modified charcoal cefoperazone deoxycholate agar (mCCDA) (Reproduced by kind permission of Thermo Fisher, Oxoid Division).

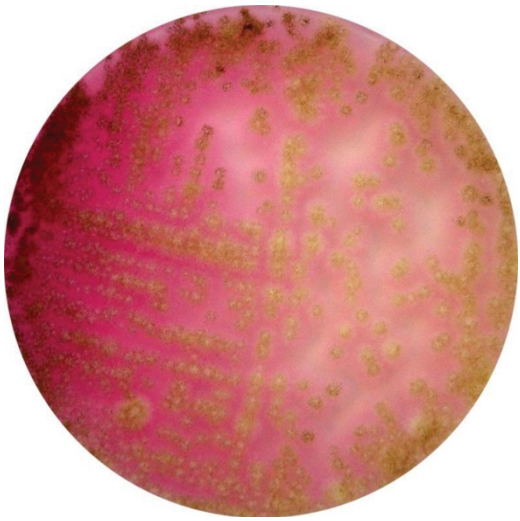

Figure P8 Aspergillus brasiliensis on DRBC agar (Reproduced by kind permission of Laboratorios Conda).

Figure P9 Formate lactose glutamate medium as a most probable number method. Yellow tubes are positive and purple tubes are negative.

Figure P10 Negative (left) and positive (right) bottles of Giolitti and Cantoni broth (Reproduced by kind permission of Thermo Fisher, Oxoid Division).

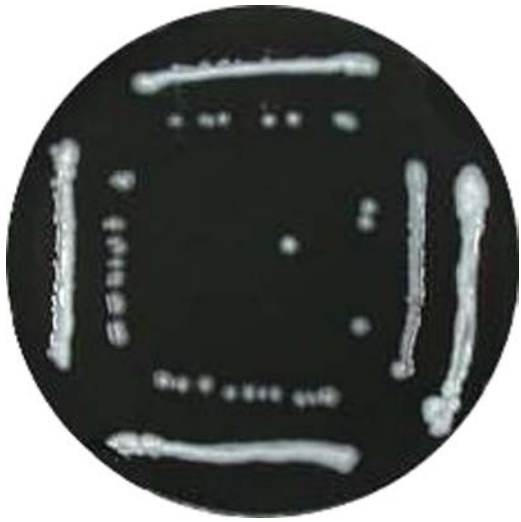

Figure P11 Legionella pneumophila on GVPC agar (Reproduced by kind permission of Laboratorios Conda).

(a) (b)

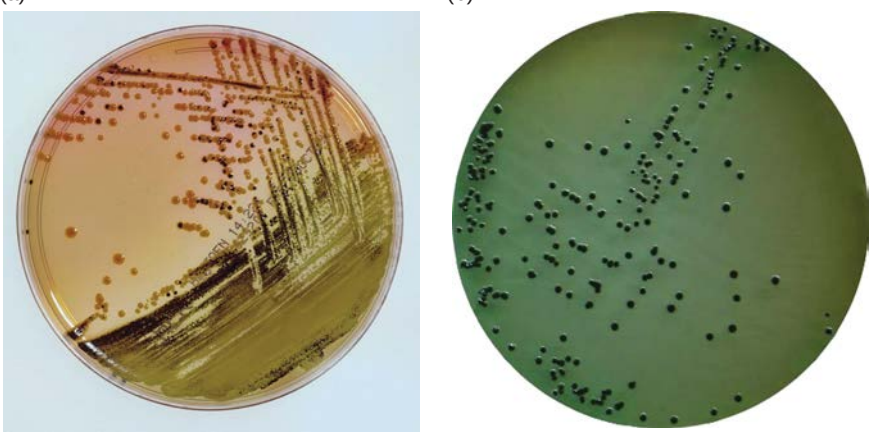

Figure P12 Hektoen enteric agar: (a) From enrichment culture (Reproduced by kind permission of bioMerieux); (b) pure culture of Salmonella Enteritidis (Reproduced by kind permission of Conda Laboratoios).

Figure P13 Enterococcus faecium on KAA agar (Reproduced by kind permission of Thermo Fisher, Oxoid Division).

(a) (b)

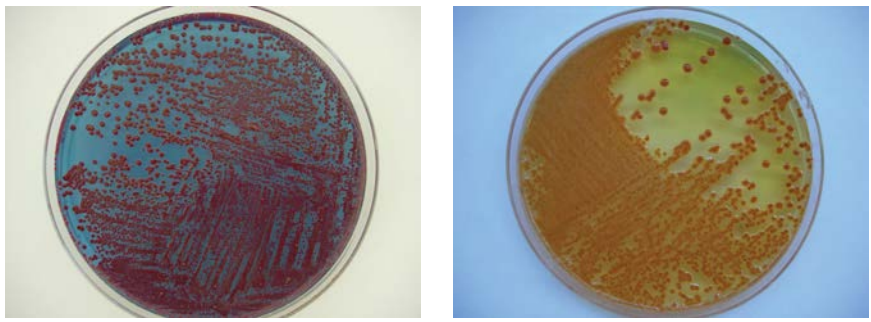

Figure P14 Lactose TTC Tergitol 7 agar: (a) lactose non-fermenter; (b) lactose fermenter (Reproduced by kind permission of Conda Laboratoios).

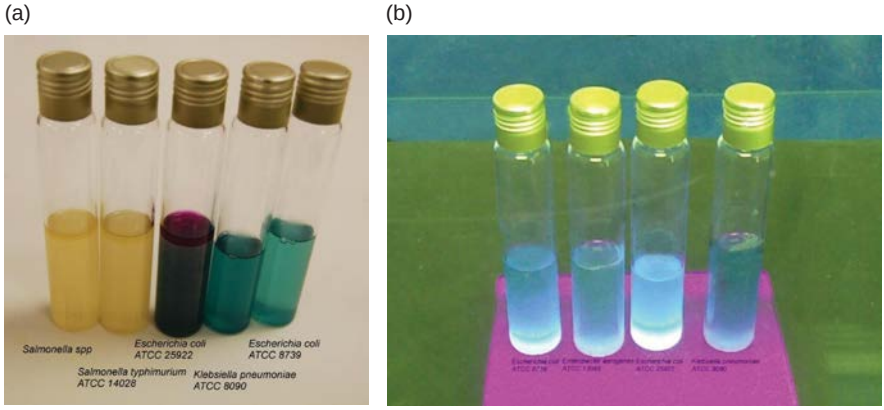

Figure P15 LMX broth viewed without (a) and with (b) UV light; left to right: Escherichia coli ATCC 8739, Enterobacter aerogenes ATCC 13048, Escherichia coli ATCC 25922, Klebsiella pneumoniae ATCC 8090 (Reproduced by kind permission of Conda Laboratoios).

Figure P16 Lactobacillus sakei on MRS agar (Reproduced by kind permission of Thermo Fisher, Oxoid Division).

Figure P17 Bacillus cereus on MEYP agar (Reproduced by kind permission of Thermo Fisher Scientific, Oxoid Products).

Figure P18 Membrane lactose glucuronide agar. Green colonies: Escherichia coli; yellow colonies: Enterobacter aerogenes; pink colonies: Pseudomonas aeruginosa (Reproduced by kind permission of Thermo Fisher Scientific, Oxoid Products).

Figure P19 Escherichia coli on M-Endo agar (Reproduced by kind permission of Conda Laboratoios).

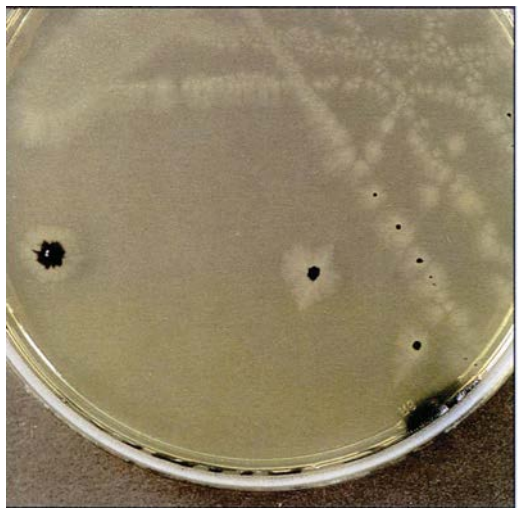

Figure P20 Clostridium perfringens on OPSPA agar (Reproduced by kind permission of Thermo Fisher Scientific, Oxoid Products).

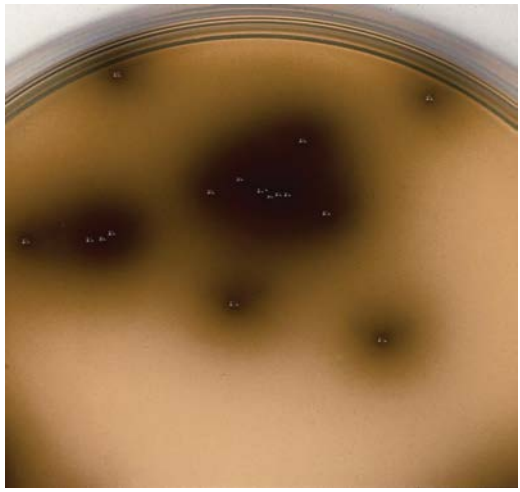

Figure P21 Listeria monocytogenes on Oxford agar (Reproduced by kind permission of Thermo Fisher Scientific, Oxoid Products).

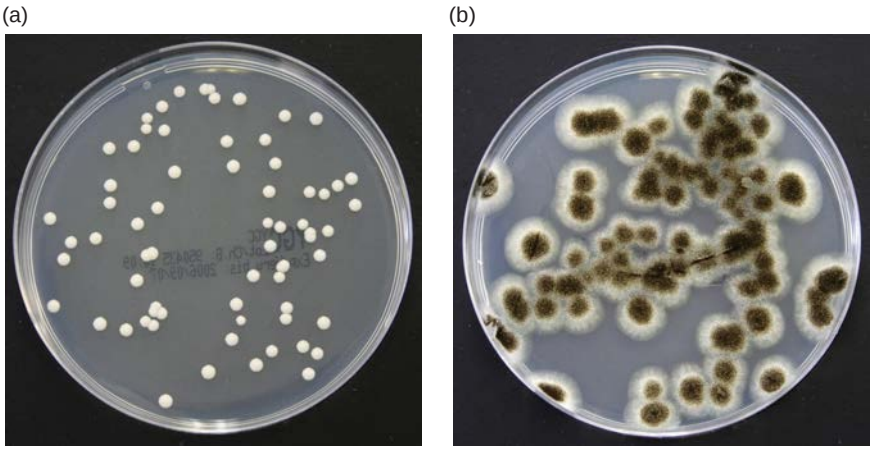

Figure P22 Oxytetracycline glucose yeast extract agar: (a) Candida albicans; (b) Aspergillus niger (Reproduced by kind permission of Thermo Fisher Scientific, Oxoid Products).

Figure P23 Modified brilliant green agar inoculated from enrichment culture; pink colonies are presumptive Salmonella.

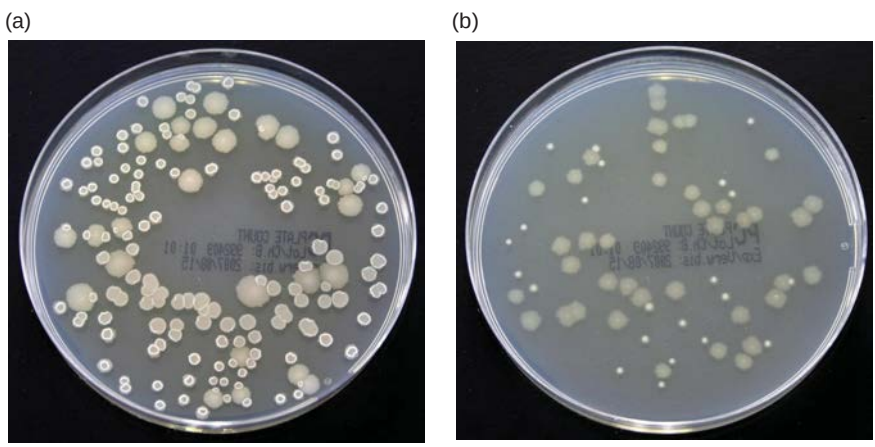

Figure P24 Plate count agar pour-plate: (a) Bacillus subtilis; (b) Escherichia coli (Reproduced by kind permission of Thermo Fisher Scientific, Oxoid Products).

Figure P25 Listeria monocytogenes on PALCAM agar (Reproduced by kind permission of Thermo Fisher Scientific, Oxoid Products).

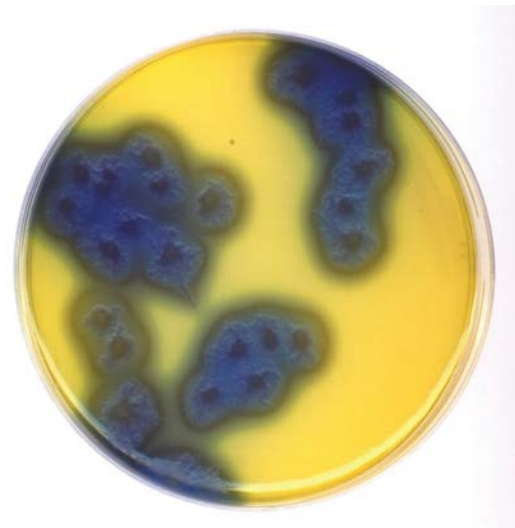

Figure P26 Bacillus cereus on PEMBA (Reproduced by kind permission of Thermo Fisher Scientific, Oxoid Products).

Figure P27 Pseudomonas aeruginosa on pseudomonas agar with cetrimide and nalidixic acid (Reproduced by kind permission of Thermo Fisher Scientific, Oxoid Products).

Figure P28 Pseudomonas aeruginosa on R2A agar (Reproduced by kind permission of Thermo Fisher Scientific, Oxoid Products).

Figure P29 Staphylococcus aureus on rabbit plasma fibrinogen agar (Reproduced by kind permission of Thermo Fisher Scientific, Oxoid Products).

Figure P30 Rambach agar (red boat: Salmonella Typhimurium; green sails: Escherichia coli; blue waves and birds: Klebsiella pneumoniae; colourless sun: Shigella flexneri) (Reproduced by kind permission of Merck).

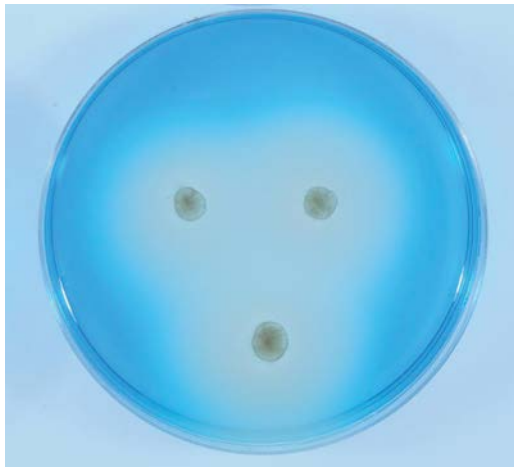

Figure P31 MSRV inoculated with enrichment culture containing Salmonella.

Figure P32 A yeast on RBC agar (Reproduced by kind permission of Thermo Fisher, Oxoid Division).

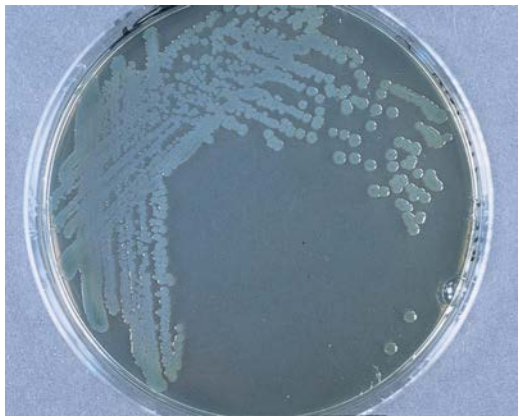

Figure P33 Vibrio parahaemolyticus on TCBS medium (Reproduced by kind permission of Thermo Fisher, Oxoid Division).

(a) (b)

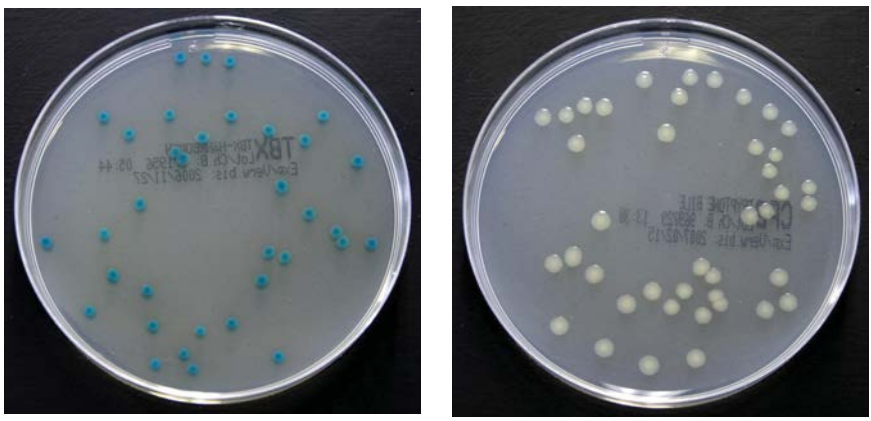

Figure P34 Escherichia coli: (a) on TBX medium; (b) on TBA (Reproduced by kind permission from Thermo Fisher, Oxoid Division).

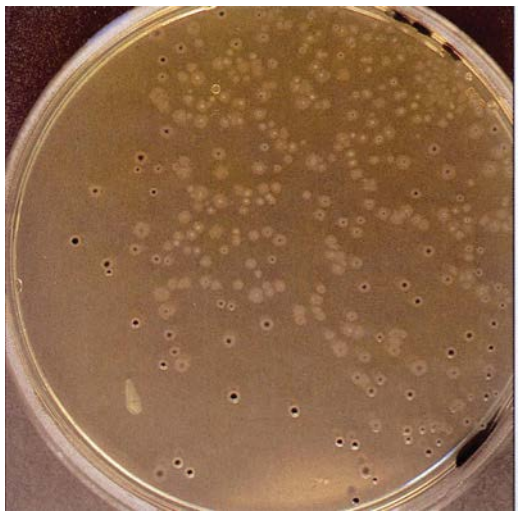

Figure P35 Clostridium perfringens on TSC agar without egg yolk (Reproduced by kind permission of Thermo Fisher, Oxoid Division).

Figure P36 Escherichia coli on VRBG agar (Reproduced by kind permission of Thermo Fisher, Oxoid Division).

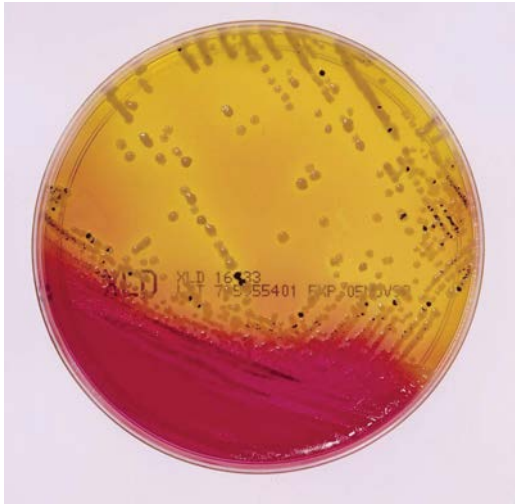

Figure P37 XLD agar, inoculated from an enrichment culture (Reproduced by kind permission of bioMerieux).