Settling solids are those suspended matters which will subside in quiescent sewage in any specified length of time.

Colloidal matter is suspended matter which is so finely divided that it is no longer acted on by gravity, and remains suspended indefinitely, yet will not pass through a parchment membrane in the ordinary process of dialysis.

Screens.—A screen is a device containing openings of proper size to retain a part of the suspended matter of sewage.

Coarse screen is one having openings in excess of ½ in. in least dimension.

Fine screen is one having openings of ½ in., or less, in least dimension.

Bar screen is one composed of parallel bars or rods.

Mesh screen is one composed of a fabric, usually of wire.

Grating.—A grating consists of two sets of parallel bars in the same plans, the sets intersecting at right angles.

Perforated plate screen is one made of perforated plates.

Band screen is one consisting of an endless band or belt which passes over upper and lower rollers.

Wing screen is one having vanes, uniformly spaced, which rotate on a horizontal axis.

Drum screen is one in the form of a cylinder or cone, consisting of perforated plates or a wire mesh which rotates on a horizontal axis.

Disc screen consists of a rotating circular perforated disc, with or without a central truncated cone of similar material mounted on the centre.

Cage screen consists of a cage having three sides made of parallel bars or rods, so arranged that it may be lowered into the sewage, and raised therefrom for cleaning.

Tank treatment is the detention of sewage or sewage sludge in tanks, either quiescent or with continuous flow.

Grit chamber is a chamber or enlarged channel in which the cross-section of sewage flow is so designed that the velocity is such that only heavy solids, such as grit and sand, are deposited, while the lighter organic solids are carried forward in suspension.

Sedimentation tank is a tank for the removal of suspended matter either by quiescent settlement or by continuous flow at such a velocity and time of retention as to allow deposition of suspended matter.

Dortmund tank is a vertical sedimentation tank, usually cylindrical, in which the raw or partially treated sewage enters the lower part, flows upward and passes out near the top. The sludge is drawn before it becomes septic from the conical or hopper-shaped bottom.

Hydrolytic tank is a tank in which by biological processes a portion of the suspended matter is converted into liquid and gaseous form.

"Septic" tank is a horizontal, continuous-flow, one-story sedimentation tank through which sewage is allowed to flow slowly, to permit suspended matter to settle to the bottom, where it is retained until anaerobic decomposition is established, resulting in the changing of some of the suspended organic matter into liquid and gaseous substances and a consequent reduction in the quantity of sludge to be disposed of.

Travis tank is a 2-story tank consisting of an upper, or sedimentation, chamber, with steeply sloping bottom, terminating in one or more slots through which the solids may slide as deposited into the sewer or sludge digestion chamber, through which a predetermined portion of the sewage is allowed to pass for the purpose of seeding and maintaining bacterial life in the sludge and carrying away decomposition products, thus inducing digestion of the sludge attended by its reduction in volume.

Imhoff or Emscher tank is a 2-story tank consisting of an upper, or sedimentation, chamber, with steeply sloping bottom, terminating in one or more slots through which the solids may slide as deposited into the lower or sludge digestion chamber—these slots being trapped so as to prevent the rise of gas and solids from the lower chamber—the lower chamber being provided with vents for the escape of the gases, the tank being so constructed as to facilitate the passage of the sewage quickly through the upper chamber and prevent the flow of sewage through the digestion chamber, and so operated that the sludge may be thoroughly decomposed, rendered practically free from offensive odor and so filled with gas that it can be readily drawn off and dried.

Activated sludge process consists in the agitation of a mixture of sewage with about 15 per cent. or more of its volume of bacterially active liquid sludge in the presence of ample atmospheric oxygen for a sufficient period of time to at least coagulate a large proportion of the colloidal substances, followed by sedimentation adequate for the subsidence of the sludge flocculi; the activated sludge having been previously produced by aeration of successive portions of sewage and maintained in its active condition by adequate aeration by itself or in contact with sewage.

Chemical precipitation consists in adding to and thoroughly mixing with the sewage such chemicals as will, by reaction with each other or with the ingredients of the sewage, produce a flocculent precipitant and subsequent sedimentation.

Sludge is the suspended matter of the sewage deposited in tanks or intercepted at the surface of filters, mixed with more or less water.

Sludge digestion is the biological process by which organic matter in sludge is gasified, liquefied, mineralized or converted into stable organic matter.

Separate sludge digestion is the digestion of sludge in tanks entirely independent from the tanks in which it is produced.

Sludge drying bed is a natural or artificial layer of porous material upon which sludge is dried by drainage and evaporation.

Sludge concentration is the process of reducing the volume of sludge and increasing its proportion of solids by allowing it to stand in a suitable tank until the solids settle down and drawing off the relatively clean water at the top.

Sludge drying is the process of drying sludge by natural or artificial heat.

Sludge dewatering is the process of removing a portion of the water contained in the sludge by draining, pressing, centrifuging or by other natural or mechanical processes.

Sludge pressing is the process of dewatering by the exertion of pressure, the solids being retained by a cloth fabric which permits the water to pass through it.

Sludge cake is the mass of dewatered sludge resulting from sludge pressing.

Scum is a floating mass of sewage solids buoyed up in part by entrained gas or grease, forming a greasy mat which remains on the surface of the sewage.

Screenings constitute the material removed from sewage by screens.