DEOXYRIBONUCLEIC ACID (DNA)

DNA is a polymer. The unit monomer in DNA is nucleotide, many molecules o which are joined together forming complex organic molecule **polynucleotide**. A nucleotide in itself is made up of three molecules of the following:

(i) Deoxyribose sugar (a pentose sugar) (Fig. 13.61B),

(ii) Phosphoric acid (H_3PO_4) and

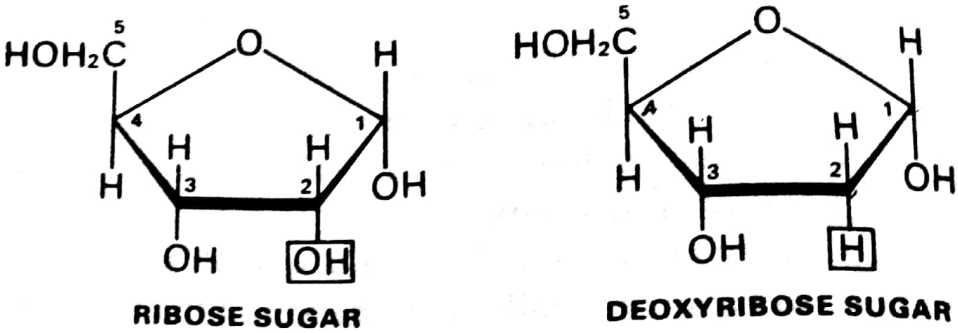
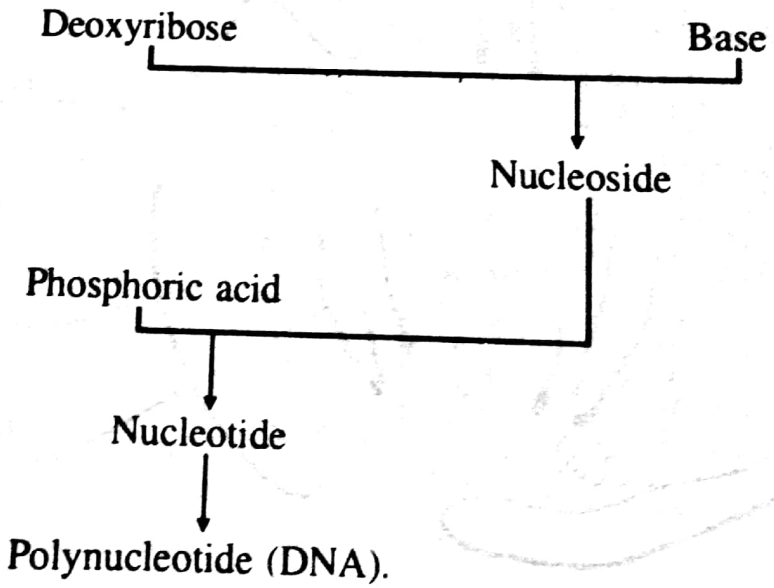


Fig. 13.61 Molecular configuration in A. Ribose sugar and **B.** Deoxyribose sugar

(iii) Following four nitrogenous bases (Fig. 13.62).

1. **Purine bases:** (a) Adenine = A
   (b) Guanine = G
2. **Pyrimidine bases:** (a) Thymine = T
   (b) Cytosine = C



Table—Interrelationship of different components of DNA

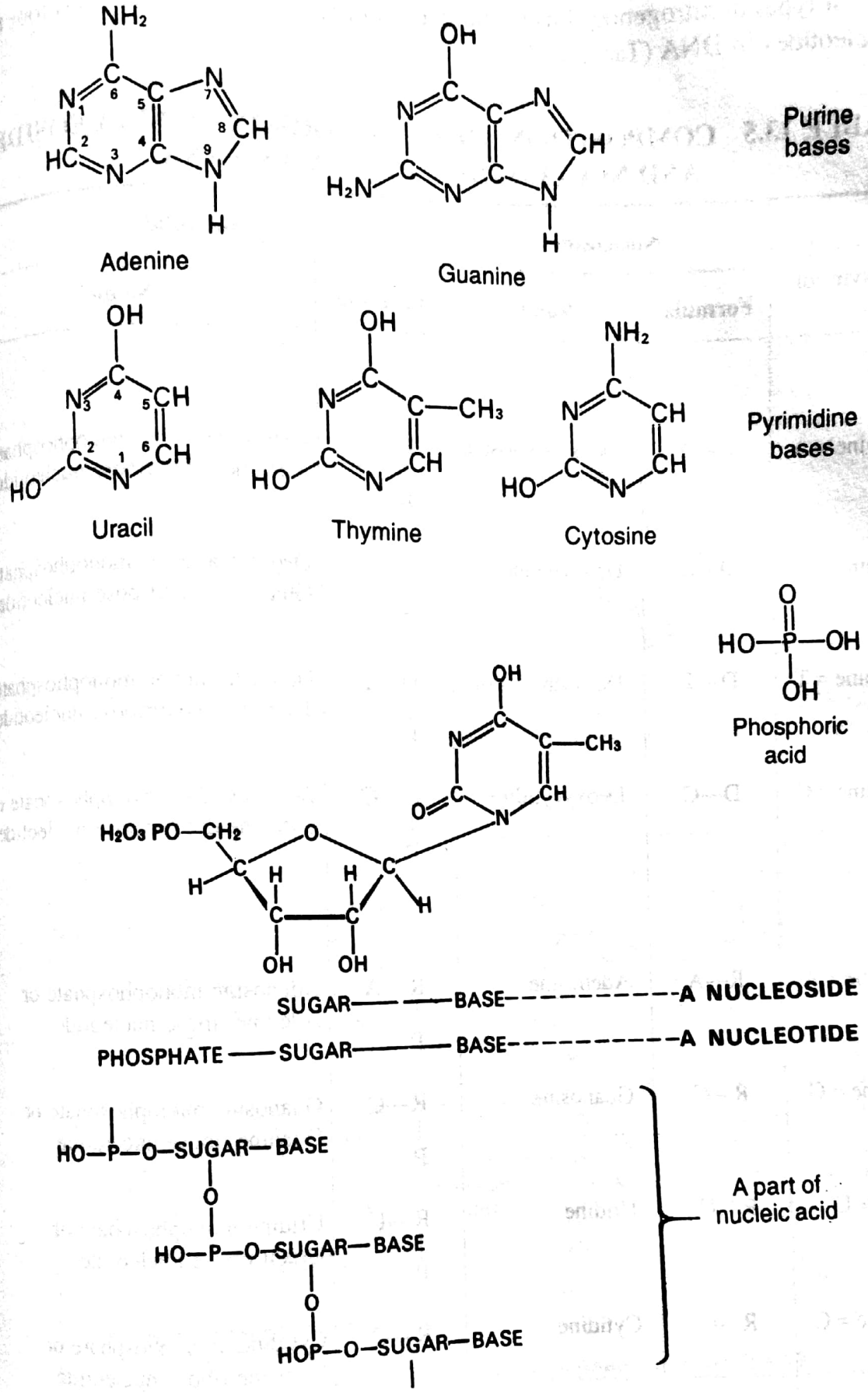


Fig. 13.62 Different nitrogenous bases, a nucleoside, a nucleotide and a part of nucleic acid, which go to form nucleic acids

A deoxyribose sugar when attached to a nitrogenous base is called **deoxyriboside**. It is a **nucleoside**. One molecule of deoxyriboside forms an ester linkage with phosphoric acid and is called **deoxyribotide**. This is a **nucleotide**. Because there are