Some critical aspects of rolling circle replication

1. Leading strand is covalently linked to parental template for the lagging strand (if double stranded)

2. Prior to precursor synthesis, the linear branch has a 5' terminus ("A" protein must have acted there)

3. Rolling circle continues unabated forming concatemers (either as ds or ss products)

4. Circular template for leading strand synthesis never leaves the circular part of the molecule

5. DNA can only be nicked to start the process *if* it is supercoiled

Phage strategies I: Generating the minus strand in single-stranded phages

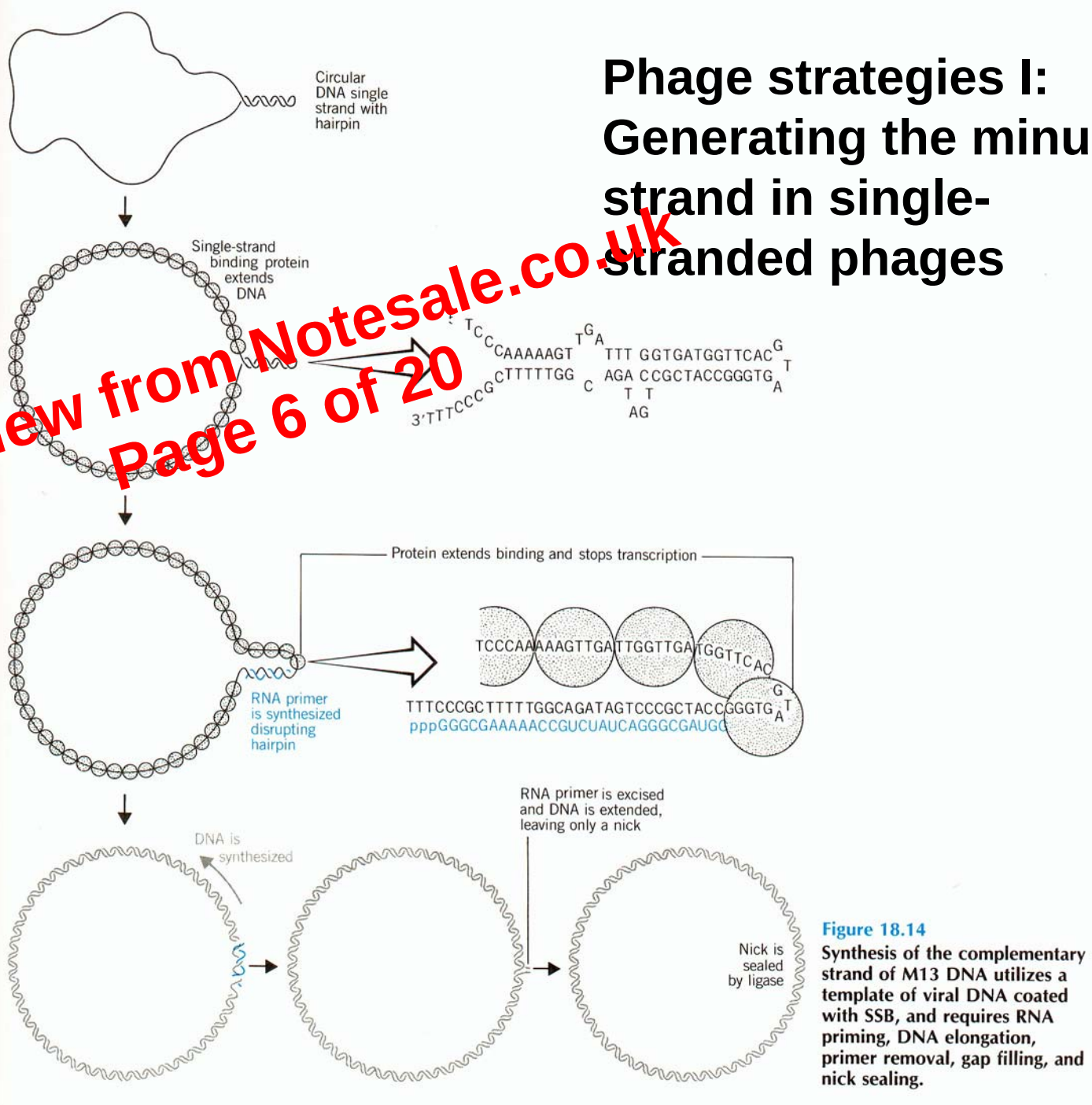

Figure 18.14
Synthesis of the complementary strand of M13 DNA utilizes a template of viral DNA coated with SSB, and requires RNA priming, DNA elongation, primer removal, gap filling, and nick sealing.

Possible organization at a Eukaryotic replication fork

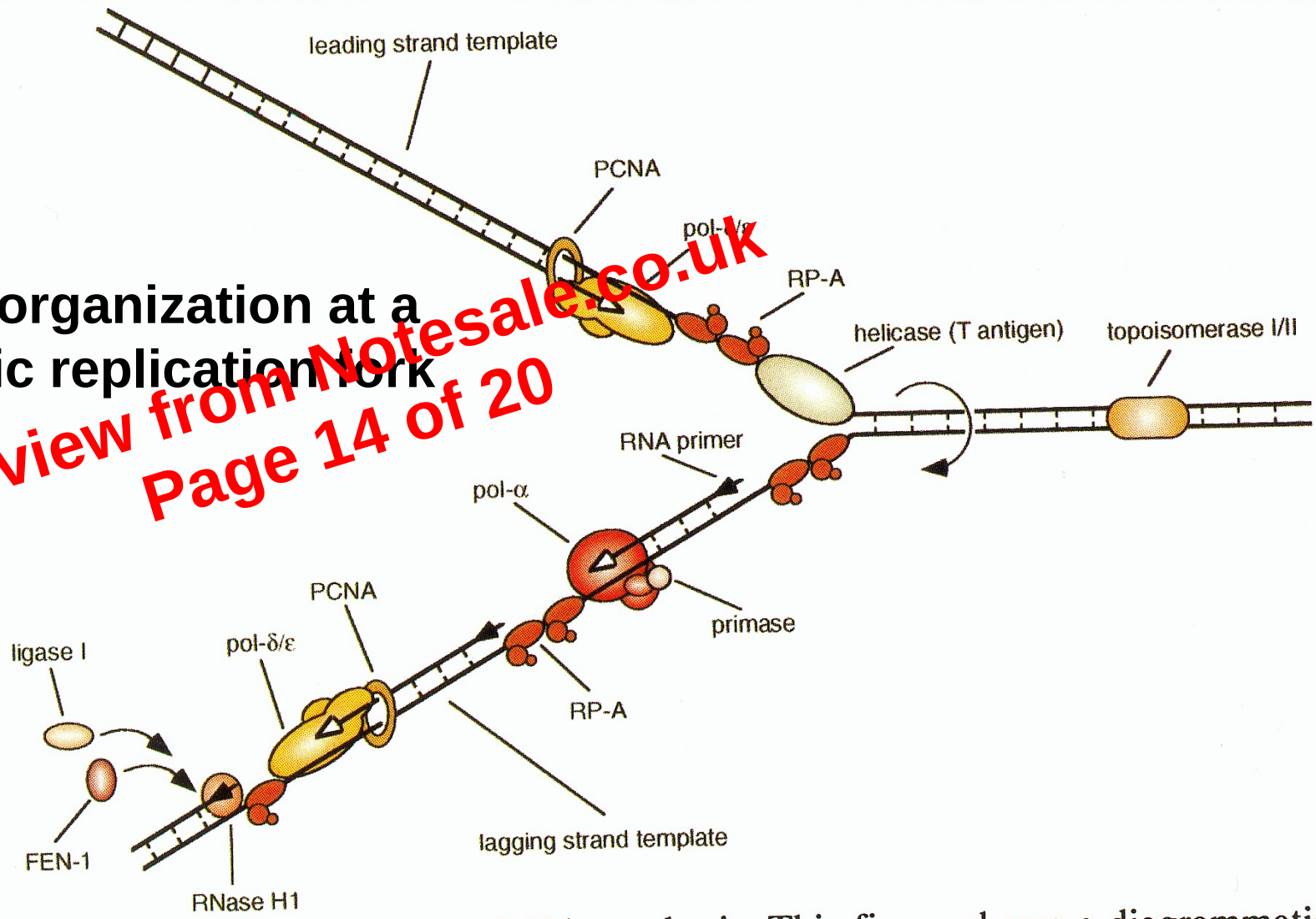

Figure 5 Semidiscontinuous DNA synthesis. This figure shows a diagrammatic view of the organization of the eukaryotic replication fork. The pol-δ/ε auxiliary factor RF-C is not included in this diagram because it is not known whether this protein stays associated with the replication apparatus after loading PCNA. See text for further details.

(From M. L. DePamphilis, 1999)