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Edgar E. Enochs* (enochs@ms.uky.edu), Department of Mathematics, University of Kentucky, Lexington, KY 40506. *Cartan-Eilenberg complexes*. Preliminary report.

In the last chapter of their Homological Algebra Cartan and Eilenberg give definitions of projective and injective resolutions of complexes. These resolutions are certain double complexes. In his thesis Verdier suggested considering these double complexes as complexes whose terms are complexes. Following Verdier's suggestions we define not only Cartan-Eilenberg projective and injective complexes but also such complexes as the Cartan-Eilenberg flat complexes. We then prove that in this relative homological setting there are many Cartan-Eilenberg counterparts of standard results. We also show that every hereditary cotorsion pair in the category of modules gives such a Cartan-Eilenberg pair in the category of complexes of complexes. (Received December 21, 2010)