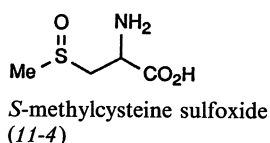
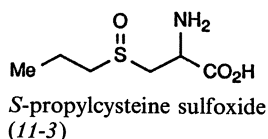
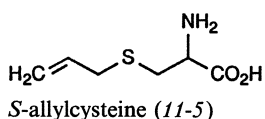


Fig. 11.1. Conversion of alliin to alliinyl by allinase

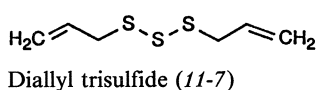
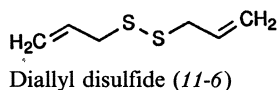
In subsequent investigations it was found that the cysteine sulfoxide fraction of garlic consists of 85% alliin along with 2% *S*-propylcysteine sulfoxide (11-3) and 13% *S*-methylcysteine sulfoxide [3].



Allinase activity on the *S*-substituted cysteine sulfoxide fraction from garlic extract yields allyl methanesulfinothioic acid ester and other symmetrical or asymmetrical sulfinothioic acid esters with methyl, propyl, and allyl substituents [3]. The presence of *S*-allyl-L-cysteine (11-5), which may be a precursor of alliin, has also been reported [4].



Additional volatile components of garlic extract were identified as allyl alcohol, methyl allyl disulfide, diallyl disulfide (11-6), dimethyl trisulfide, allyl methyl trisulfide, diallyl trisulfide (11-7) and sulfur dioxide [5].



Alliin decomposed nearly completely at 20°C within 20 h, giving diallyl disulfide as the major product and diallyl trisulfide, diallyl sulfide, sulfur oxide, and trace amounts of two 1,2-dithiin compounds: 3-vinyl-6H-1,2-dithiin (11-8) and 3-vinyl-4H-1,2-dithiin (11-9) [5].