relationship between length and weight of the two species, Cyprinus carpio and Acanthopagrus latus, according to body length and weight. After taking the gills out of fish bodies, the following measurements were undertaken: gills weight, length of gill arch, number of gill reakers and filaments, and length of gill filament. The results showed that there were significant positive correlations between the following characteristics (a) fish length and each of length of arch, length of gill filament, and fish weight of the two species, (b) fish length and each of gill weight and number of gill arch filaments of C. ca, (c) fish weight and each of length of gill arch and length of gill arch filament of two species, (d) fish weight and each of gill weight and number of gill arch filament of C. ca. According to the coefficient of linear regression of some of functional criteria of the respiratory system, it was found that there was a significant effect (P<0.01) of fish weight, length on each of gill weight, gill arch length, number of gill arch filaments, and length of gill arch filaments of C. ca. There was also a significant effect (P<0.01) of fish weight and length on each of gill arch length and gill arch filament length of A. latus.