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The fungal dimension of biodiversity: magnitude, significance, and conservation

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Fungi, members of the kingdoms Chromista, Fungi s.str. and Protozoa studied by mycologists, have received scant consideration in discussions on biodiversity. The number of known species is about 69 000, but that in the world is conservatively estimated at 1.5 million; six-times higher than hitherto suggested. The new world estimate is primarily based on vascular plant: fungus ratios in different regions. It is considered conservative as: (1) it is based on the lower estimates of world vascular plants; (2) no separate provision is made for the vast numbers of insects now suggested to exist; (3) ratios are based on areas still not fully known mycologically; and (4) no allowance is made for higher ratios in tropical and polar regions. Evidence that numerous new species remain to be found is presented. This realization has major implications for systematic manpower, resources, and classification. Fungi have and continue to play a vital role in the evolution of terrestrial life (especially through mutualisms), ecosystem function and the maintenance of biodiversity, human progress, and the operation of Gaia. Conservation *in situ* and *ex situ* are complementary, and the significance of culture

collections is stressed. International collaboration is required to develop a world inventory, quantify functional roles, and for effective conservation.



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