to trace, with the narratives of the explorers in hand, the gradual evolution of geography from the stage where a great blank space represents a sea or a continent, through a series showing gradually increasing accuracy and detail, down to the complete maps of the present day.¹

The earliest maps are very crude and full of errors. The first explorers had neither the means nor the time for making accurate surveys, and could make their maps only by the aid of general compass directions and a few crude measurements of the speed of their ships,—such maps in fact as we now call "sketch maps." Nor were these maps copied accurately by the professional mapmakers; for the outlines were not closely followed and the names of places were

misspelled and in other ways altered with the greatest carelessness, thus making cartography, or the study of old maps, by no means an easy study, nor one in which all students can the to an agreement. Still, as partial compensation for this, many of the old maps are most artistically ornamented and colored, so that it is a delight to possess and study them. They often also have their old spaces filled with pictures of men, animals, cities, etc., and these pictures in them-



Fig. 1—Portuguese Map of Viegas before 1534.

selves are at times of great historic interest and value.

The fact of greatest importance about old maps is this, they do not show a gradual improvement from the earliest times down to the present, but the improvement goes by leaps, as it were, with long intervals between when the maps not only do not become better, but, through carelessness in copying, become actually worse. This was because the mapmakers could gain no new knowledge for the improvement of their maps, excepting such as was furnished to them by the explorers, who were few in number and far apart. When an explorer came home, the maps became suddenly better, then gradually worse until another returned, and so on.

¹This has been done for New Brunswick in a monograph in the Transactions of the Royal Society of Canada, vol. III (1897). From this work the accompanying four figures are taken. As these are intended to illustrate New Brunswick only, the names are all omitted, except on the New Brunswick coast. All are but parts of large maps.