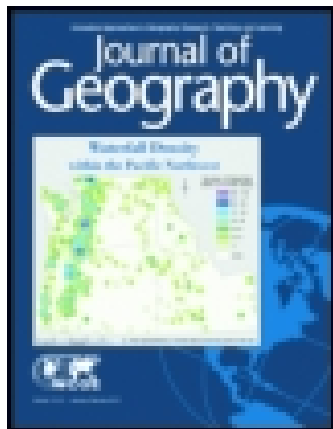


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A Model Series of Base Maps

J. Paul Goode ^a

^a Assistant Professor of Geography , University of Chicago , Chicago, ill.

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(Fig. 3). And if the meridian of 90° E. be chosen, it will give an equal advantage to the eastern continent. In this modified form the projection gives a much greater marginal distortion in high latitudes. But this is largely compensated for by the increase of accuracy in the 200° of longitude in the middle of the map, and in all longitudes in low latitudes.

These new projections have very high value. They have received the heartiest approval on the part of the leading German geographers, and have been published in the foreign magazines of highest authority. They should win their way into a secure niche in everyday use.

A MODEL SERIES OF BASE MAPS

BY J. PAUL GOODE

Assistant Professor of Geography, University of Chicago, Chicago, Ill.

WITH every active teacher and growing student the need is constantly rising for a base map for the entry of facts of distribution of one kind or another. Multitudes of these facts meet us all along the way. It may be the delineation of routes of commerce, or the movement of populations, the territorial expansion of governments, or productive areas in commercial geography. In all lines from common school geography and history, through civics, physiography, meteorology, commercial geography, politics and sociology, these needs confront us. For a map is a kind of shorthand, and expresses far more rapidly, and accurately too, the facts of distribution, than a long and tedious detailed description could do. And the map appeals to the eye, so adding another sense to the avenues of acquisition of knowledge.

But when we look about us to find blank maps upon which we may chart these data, they are not to be had, or are hard to find. It is true, a dozen publishers in this country issue series of outline maps intended for such a purpose. But to mention any one of them is to condemn it. As a rule they are atrociously drawn, they are printed with poor ink on inferior paper, and if our seventh grade pupils had been adequately taught they would be insulted to have such stuff put before them. The paper is thin and open, it takes neither water color, ink, crayon or pencil adequately, and the pupil's work when entered, is a smutch and a disgrace.

For a number of years the writer of this paper has been looking for a respectable series of base maps. They have not yet been found in the small size required for student note-book work. It has even been necessary to have some made to order to get decent paper and respectable drawing.

So it was with real pleasure, that a year ago Madden's "Thermo-Geographical Studies" brought to my notice a very beautiful base map upon which the author had charted some climatic data. The map was the northern polar cap down to latitude 30° N. in a polar projection, yet with the distortion admirably distributed. It was drawn with great accuracy, and meridians and parallels for each degree were shown. Lands were tinted a light buff, the seas were untinted. Drainage lines, mountain axes, and important cities were shown, but not political boundaries. The map was the first of a series, constructed by Lieut-Col. Axel Staggemeier of Copenhagen.

The series was sent for at once, and was promptly forwarded to me by Col. Otto Staggemeier, Kong George Vej. No. 12, Copenhagen. It proves to be an ideal set of base maps, and many another student may be glad to know about them.

The set consists of twenty-five sheets, 22x21 inches, on a fine quality of plate paper. The maps are lithographed and the workmanship is excellent. There is a line for every degree of latitude and longitude, every fifth one slightly emphasized. All the letter press is in English, in engraver's Roman.

The first five sheets cover the earth's surface, as general maps. First the north polar projection, down to latitude 30° N. (No. 1). This covers one-quarter of the earth's surface and is so free from distortion that one is glad to know the method of projection. The equator is the plane of projection (A. B.) and the point of sight is in the earth's axis, produced beyond the south pole far enough to make the equator subtend an angle of 60° . This, obviously, makes all meridians straight lines, and all parallels circles, and distributes the errors of projection as shown upon the equator in the accompanying figure.

One can see at a glance the very great advantage such a projection has as a base map. One may take out any section of it, balance it upon its middle meridian, and have it erect and well poised upon his page. And we all know the lop-sided appearance made by taking out any part of a map on the usual projections, unless it be the one strip along the central meridian.

The next three charts cover 120° longitude each on Mercator's projection, representing that one-half of the earth's surface lying between the parallels of 30° N. and S. The points of view are so chosen as to give an Atlantic face (No. 2), a Pacific face (No. 3) and an Indian face (No. 4). Chart 5 finishes the general set, with a south polar projection down to latitude 30° S.

The remaining twenty sheets cover the earth on double the scale, giving

us four sheets for the north polar quarter of the earth's surface, divided on longitudes 60° E.- 30° W. (No. 6); 30° W.- 120° W. (No. 7); 120° W.- 150° E. (No. 8); 150° E.- 60° E. (No. 9). Then the middle zone of

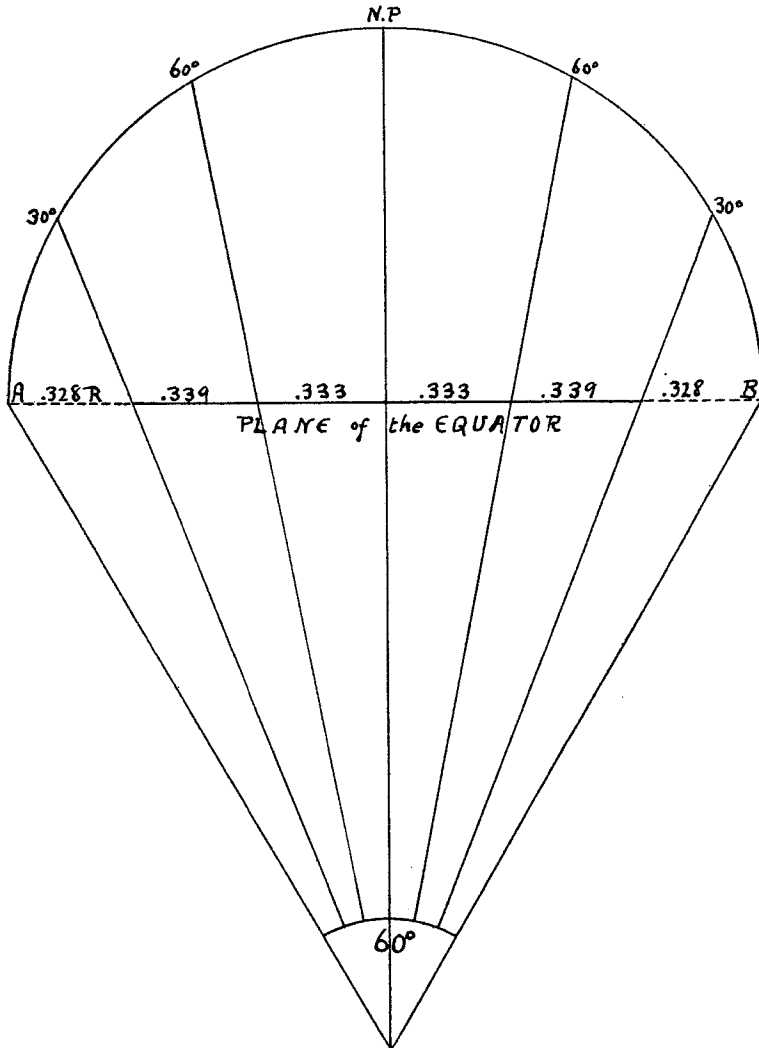


Figure showing the method of projection of the polar caps

lower latitude is covered in Mercator's projection, in twelve sheets, running from the equator to latitude 45° N. and S., as follows: N. 20° E.- 40° W. (No. 10); S. 20° E.- 40° W. (No. 11); N. 40° W.- 100° W. (No. 12);

S. 40° W.- 100° W. (No. 13); these four forming the Atlantic face. The next four:—N. 100° W.- 160° W. (No. 14); S. 100° W.- 160° W. (No. 15); N. 160° W.- 140° E. (No. 16); S. 160° W.- 140° E. (No. 17); give us the Pacific face. The middle zone is finished with another four:—N. 140° E.- 80° E. (No. 18); S. 140° E.- 80° E. (No. 19); N. 80° E.- 20° E. (No. 20); S. 80° E.- 20° E. (No. 21); as the Indian face. The final four give the quadrants of the southern cap, latitude above 30° ; 60° E.- 30° W. (No. 22); 30° W.- 120° W. (No. 23); 120° W.- 150° E. (No. 24); 150° E.- 60° E. (No. 25).

It is indeed a satisfaction to know that somewhere upon the planet, strictly high class base maps are made, even if we do have to go to the bother of sending to a foreign country with its difference in money, and perhaps with a barbarous tariff added as a fine upon the spread of intelligence.

But it would not be fair, in praising this set of maps not to call attention to some most excellent base maps of the United States, which are available for the use of teachers and students. These are copper engraved, and printed from stone, very accurate and very beautiful. They are another example of the almost incredible generosity of our government, when it sets its hand to a line of educational development. The maps referred to are in a series of general maps published by the United States Geological Survey, address The Director U. S. G. S., Washington.

(1) Base map of the U. S. one sheet, 11×16 inches, 204 miles to an inch, polyconic projection. All water entered in blue. Rivers and lakes shown in considerable detail. State boundaries, and names, and names of some rivers and cities in black. On a fine quality of plate paper, which will take any medium from pencil to ink. These maps are sold at five cents each, or at two cents when taken in lots of a hundred or over. And of course carriage is free, for they are sent by mail, at the government's expense.

(2) Base map of the U. S. one sheet, 18×28 , 111 miles to an inch, polyconic projection. Rivers, a very generous number, entered in blue. Seas and lakes in green. Land untinted. Culture data—boundaries, cities, names, in black. These maps are large enough for use in class demonstration. Distribution may be entered in ink, watercolor or crayon. They are sold at ten cents each, or for one hundred or more, at four cents. This same map can be had with contours at the same price, or it may be had tinted in brown to show relief, at the same price.

(3) Base map of U. S., 49×76 inches, in three sheets, scale 40 miles to the inch, polyconic projection, all water in blue, culture in black. State and county boundaries, county seats and many cities given, latitudes and longi-

tudes represented by a line for each degree. A very accurate and a very valuable map. It is sold for sixty cents, singly, or at twenty-four cents in lots of a hundred. This map with railways, and contours of 100, 500, 1,000, 1,500, 2,000 feet and upward in thousand foot intervals, may be had at the same price. There could scarcely be a better map for school and general use.

It is very encouraging to have such *fine maps* available at such a generous price. The 11x16 map really comes within the possibility of individual use in class work, and the 18x20 map is ideal for the teacher's use in class demonstration, and is easily within the limits of his purse. But this is the end of the list. There is nothing else first class on the market in America. The regulation map on sale for the purpose is so bad, one would believe it if it bore the press mark of the "Gully Sunbeam." To put such stuff before an eighth grade student properly trained in graphic expression would be like giving a wood carver in the Pullman shops a plank from the sidewalk and a pick ax to work with. A base map for student use should be done in the highest quality of the draughtsman's skill, and of the pressman's art. It ought to be *right*, and in quality beyond anything the pupil may hope to do. By no means should it stand in the way of his best expression. It ought to be an example and a stimulus to him, to do his best in working with it. When shall we ever have such a series?

DIRECTION ON MAPS

Any teacher, no matter how untrained she may be in the use of map projections, ought at least to know that straight lines drawn from the right side to the left side of a map are not necessarily east and west lines. She should realize that the continuous black lines extending more or less across the map are east and west lines and that the similar lines extending up and down are north and south lines. Hence direction may easily be studied within the small irregular rectangles enclosed by two meridians and two parallels. These points need to be kept clearly in mind especially in wall-map work by pupils. Such problems as the direction and flow of the Yukon River or the St. Lawrence River ought to be studied as related to the meridians and parallels and not according to the sides of the maps merely, as is usually done.

Any teacher ought also to know that on a Mercator map areas in high latitudes are grossly exaggerated and that a Mercator map should not be used for comparison of areas. Neither should it be used for comparison of distances, though it is accurate in reference to direction. A teacher who studied distance according to scale would soon find that a Mercator map could not be used in this way because no scale would be found.