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MAP DRAWING IN THE SCHOOLS*

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AS a part of the course in geographical instruction some work in map drawing is introduced by many of our schools. The object of this work is not so much to give pupils training in the art of drawing, as it is to give them a certain familiarity with the outlines and positions of the more important land masses of the globe. Certainly the object is a worthy one, for a knowledge of the outlines and relative positions of the continents is of incalculable service to anyone who reads and thinks.

Recent years have witnessed a wonderful improvement in many phases of geographical teaching, particularly in the more advanced departments of our science. Attention has been directed principally to physical and commercial geography, and the places they should occupy in geographical instruction, rather than to problems in elementary geography. It seems possible, therefore, that there may yet be room for improvement in so simple a subject as the drawing of maps. If improvement is possible here, the task of securing it is worthy of our serious attention; for the benefits of improvement will be reaped not only by those who later enter higher schools, but also by the far larger group who early leave the school-room to test more quickly the practical value of the instruction they have received.

That map drawing in the grades does not now accomplish all that we may reasonably hope for it, is a conviction which grows upon the man or woman who gives the subject any study. Each investigator may, indeed, have different ideas as to just what map drawing should accomplish for the student; but surely the standard of accomplishment is not a high one which is satisfied by the present results. Let us consider for a moment the good to be secured by instruction in map drawing, and endeavor to set for ourselves a standard, reasonably ambitious, yet not beyond attainment. Then we will be in a position to test the results at

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present secured by map drawing in the schools, and thus to learn whether they measure up to our standard. If they do not, it will be pertinent to inquire why not, and to suggest possible improvements.

First, what good may be secured from instruction in map drawing? We have an abundance of cheap maps better than those the students will draw; but we are all convinced that the mind of a student does not apprehend details of outline, general form or relative position so readily from a printed map as from the experience of making a map of his own. Map drawing fixes the attention upon features and relations which might otherwise pass unnoticed. But having directed the attention of the student to these points, shall we pass at once to something else? Judging from the work as now conducted in the schools the answer to this question is "No; it is worth while to have the student draw all or parts of the same thing several times, to fix important points in his mind." It is generally admitted that a fairly good mental picture of the outlines of continents, countries, important islands, etc., is an asset worth possessing, and that map drawing helps the student to acquire this asset. The "atlas habit" is a good habit, and we delight to observe it in the student who studies the pages to find geographical details with which few care to burden the memory. But how poor geographically is the mental equipment of the mature student who must turn to an atlas to find out whether or not South America lies directly south of North America; or what is the general shape of his own continent. The "memory-map habit," as well as the atlas habit, is a valuable asset; and one which is essential to the intelligent appreciation of much which a man sees and hears at times when an atlas is not conveniently available.

Indeed, it would be difficult to overestimate the value of a correct mental picture of the broader features of the earth. Such a mental picture is of value not alone in the study of geography in its various phases, but in the study of many other subjects, such as history, economics, and government; and in the daily reading of newspapers and magazines, and the daily conversations of intelligent people concerning current events. If this memory map is to serve its possessor properly, it is not sufficient that the outlines of the land masses be memorized correctly; the positions of the land masses must also be fixed in mind. A discussion of

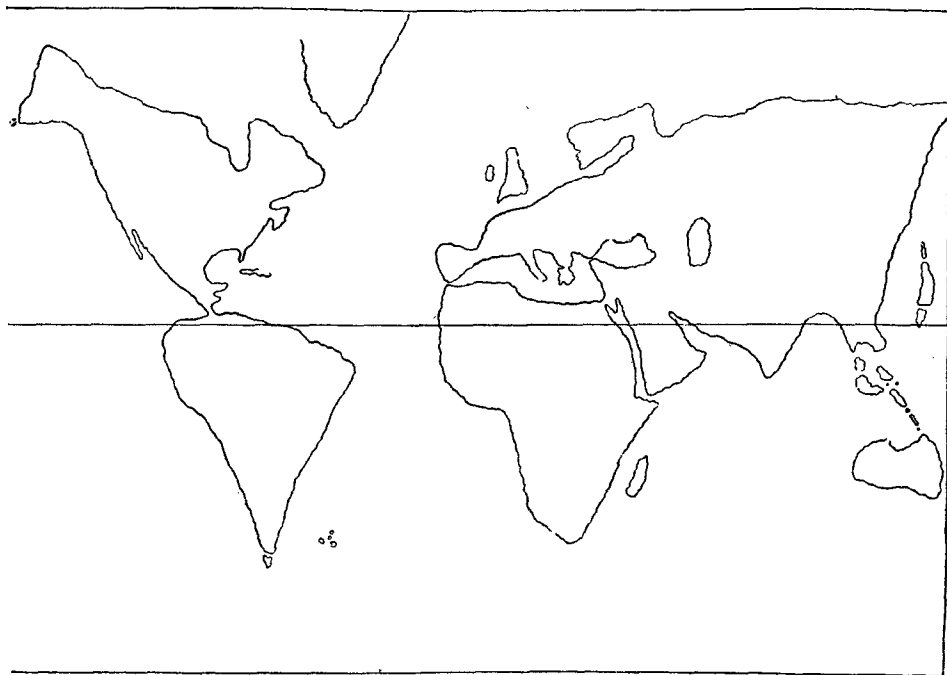


Fig. 1 Memory map drawn by college student

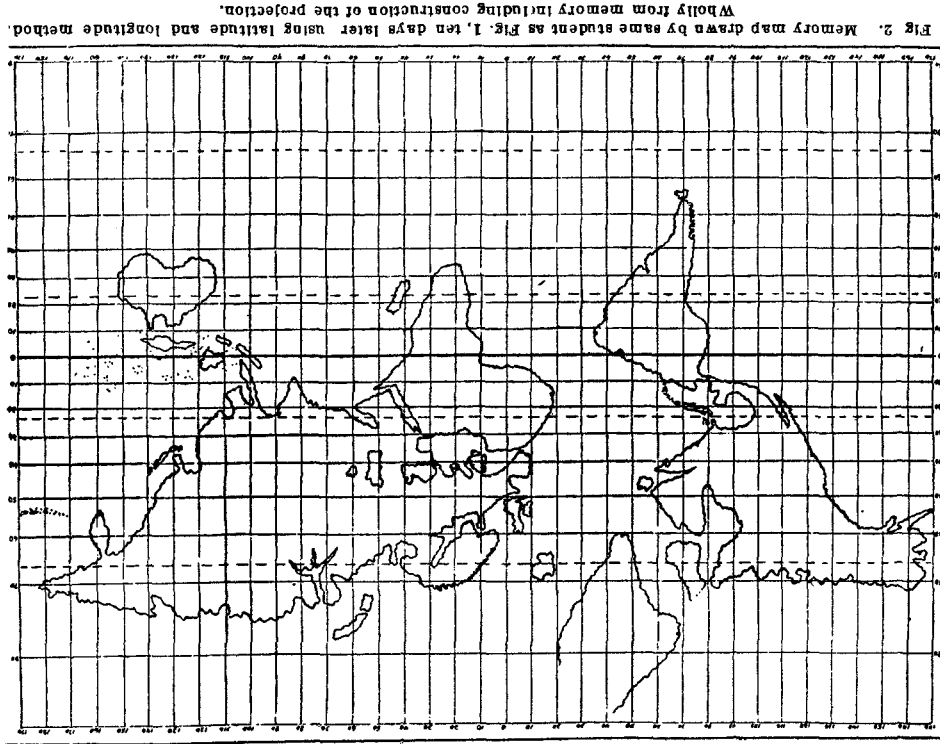


Fig. 2. Memory map drawn by same student as Fig. 1, ten days later using latitude and longitude method. Wholly from memory including construction of the projection.

the cotton producing areas of the world loses much of its significance for the man or woman whose mental world map has Egypt located under the Equator, the plateau of the India Peninsula south of the Equator, and the southeastern United States under the Tropic of Cancer. If you wish an example of the mental confusion which arises from a bad memory map, ask a person whose mental picture of Africa has the Equator crossing the Sahara Desert (there are multitudes of such persons), to locate the Equatorial Forests of Africa. Printed maps in books, and large wall maps displayed before classes are of great service in making an effective presentation of many subjects. But a map somewhere in the book, or sometimes on the wall, is a poor substitute for a good memory map always and instantly at one's service. Good printed maps are absolutely essential if one is to profit by a study of details which he can not carry in mind. But the study of these details should be based on a good memory map which the student carries with him everywhere, and which is sufficient for an intelligent consideration of any subject involving the broader features of the earth.

If a good memory map is so desirable an asset, it seems reasonable to ask that our work in map drawing should give the student such a map. Certainly we are not over ambitious in desiring for our students a mental picture of the earth which shows the outlines and positions of the larger land masses with reasonable accuracy. That such an ambition may be fully realized for most students I firmly believe. The basis of this belief is more fully set forth below. For the present, at least, let us set up this standard for the map drawing work; that it shall give the student the ability to draw from memory, maps in which the outlines and positions of the larger land masses are reasonably correct.

Do present results measure up to this standard? I fear they do not. I have endeavored to test the matter in a variety of ways, and so far as my experience goes the average boy or girl, and I may add, the average man or woman, carries in the mind a very vague and distorted picture of the continents. My attention was first directed to this subject in connection with a course on Economic Geography in Harvard University, at the beginning of which I endeavored to ascertain what mental pictures of the continents college students had at their service. Allowing plenty of

time for the task, I asked each student to draw the best map of the-world which he could construct from memory. (See Figs. 1 and 2). The results were appalling. Men who had followed with interest the events of the Russo-Japanese War, drew the entire coast of Asia without the pretense of a peninsula or a gulf, and placed Japan under the Equator. Nor was this a particularly bad year for memory maps. I have since tried the experiment repeatedly, and always with most discouraging results. This year, in a class of forty men, seventy per cent. of the class placed the Equator in northern Africa, or entirely north of that continent in the Mediterranean Sea. Seventy-five per cent. thought South America should be centered directly south of North America. Fifty per cent. extended the peninsula of India south of the Equator, a few making that peninsula about the size of Africa and extending it about as far south as the southern point of that continent. In one-fifth of the maps the Equator does not touch the continent of South America. In one-half of the maps Africa extends as far south as South America; or a good deal farther south. So much for some of the common errors of position. As for the outlines, it would be difficult to set forth clearly the kinds or degrees of errors made. Many of the representations of the continents show not the slightest resemblance to their prototypes. Fully fifty per cent. of the maps of Asia would be utterly unrecognizable without labels printed on them, unless associated with the rest of the drawings. In many cases the drawings of Africa and South America could exchange places without marring the value of the map. Such is the mental background upon which college students arrange geographical items encountered in their daily reading and in many of their studies.

It may be argued that the test was applied too long a time after the students had practiced map drawing to be of any significance. I can not accept this argument as valid, for in my opinion map drawing properly taught will make it impossible for a student to relapse into such a condition of map ignorance as is evidenced by the results of my experiments. This is a matter to which we will recur later. Let us consider for a moment the work of grade pupils in the schools. Last winter I had an opportunity to supervise some work in map drawing by fifth, sixth, and seventh grade pupils. These pupils had previously been doing more or less map drawing, and some of them were required by the teacher to draw

from memory maps of certain continents, with the greatest possible speed—minute maps, as they were called. The principal criticism merited by the minute maps was that they were based on poor mental pictures; for the pupils could not draw good maps of the same continents when given ample time. The results of our numerous experiments, carried on through the winter, furnished convincing proof that in the three grades mentioned the map work could be improved in a truly remarkable degree with the aid of improved methods.

It has been claimed that frequent use of maps will of itself give the user a good mental picture of the continents, and that no special practice in drawing maps is needed by such a person. It occurred to me that if this claim be true, teachers of geography should be especially well equipped with memory maps of the continents. Accordingly I asked a class of more than a hundred geography teachers to draw from memory the best maps of the world which they were capable of producing. A few gave up entirely after several attempts, saying that they had not the slightest idea of shape or relative position when deprived of the aid of printed maps. Others persevered, and committed the same kinds of errors of which the college students were guilty. In answer to the question "Do you not teach your pupils to draw maps?" several teachers replied, "Oh, yes, I make the children draw maps, but I never try it myself." A few weeks later these same teachers demonstrated their ability to draw excellent maps from memory after having given a little systematic study to that branch of their work.

There is no need of further argument in support of the conclusion that the exercises in map drawing now performed in the schools, whether many or few in number, generally fail to give results up to the standard which we established in the first part of this discussion. Any one who makes a careful study of the results of this work must be convinced that for some reason, or reasons, school pupils and college students, school teachers and people in general, have a very vague and unsatisfactory mental picture of even the largest features of the earth. Let us next consider the reasons for this state of affairs.

(To be Concluded.)