

**IOWA GEOLOGICAL
SURVEY; A DESCRIPTION
OF THE REGION ABOUT
CAMP DODGE**

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Iowa Geological Survey; A Description of the Region about Camp Dodge by James H. Lees

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JAMES H. LEES

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A DESCRIPTION

OF

THE REGION ABOUT CAMP DODGE

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LETTER OF TRANSMITTAL

IOWA GEOLOGICAL SURVEY

To Governor William L. Harding and Members of the Geological Board:

Gentlemen: I submit herewith a report entitled "A Description of the Region about Camp Dodge", and recommend that it be published as a special bulletin of the Iowa Geological Survey.

In this report there will be found descriptions and interpretations of the topography and geology of the region in which thousands of the young men of our state and other states are receiving their military training for service beyond the seas. It is hoped that the information which is presented, together with the topographic map which accompanies the report, will enable the soldiers and other persons to understand more fully than they otherwise could have done the influence of the natural features of the region upon military training and maneuvering, and upon many of the other activities of the camp. The report should serve also to emphasize the well known fact that wherever military operations are being carried on and war is being waged there is an intimate relationship between the topography and geology of the region and the movements of the armies. The mountain, the hill, the cliff, the plain, the valley, the swamp, the soil, the underlying rock, each of these plays its part in connection with the activities of artillery, of cavalry, and of infantry, the digging of trenches, the furnishing of water supply, and in many other ways.

The report was prepared by Dr. James H. Lees, Assistant State Geologist. Similar reports have been undertaken at various army camps throughout the United States at the suggestion of the Geology and Paleontology Committee of the National Research Council after conference with prominent military men.

Respectfully submitted,

GEORGE F. KAY, *State Geologist.*

A DESCRIPTION OF THE REGION ABOUT CAMP DODGE

INTRODUCTION

The region about Camp Dodge, or more exactly, the vicinity of Des Moines, has a certain military interest because here was located one of the early army posts which preceded and accompanied the permanent settlement of the Des Moines valley and the bordering upland prairies. In order to prevent disturbances between the hostile Indian tribes of central Iowa and also to check the activities of a band of outlaws which was committing depredations in the vicinity, the War Department in 1842 issued orders for the establishment of a military post at the junction of Des Moines and Raccoon rivers. Captain James Allen of the First United States Dragoons ascended the river from Fort Sandford, near the present site of Ottumwa, in November of the same year and selected a location for the proposed post. In the spring of 1843 Captain Allen returned with a company of infantry and one of cavalry and established the fort along the west bank of the Des Moines near the present line of Second Street. He named the post Fort Raccoon, but General Scott did not approve of this name and ordered it changed to Fort Des Moines. This post was maintained until 1846, by which time the Indians had ceded their lands to the government and had moved beyond Missouri river. The Indian lands were then opened to settlement and the fort was abandoned. The Daughters of the American Revolution maintain a stone monument here and a flag still floats over the former site of old Fort Des Moines.

A second military post was established near Des Moines only a few years ago, chiefly through the untiring efforts and personal influence of Captain J. A. T. Hull, who for twenty years represented this district in Congress. Captain Hull began working for the establishment of an army post at Des Moines in 1894, but it was not until 1903 that he saw the successful issue of his labors and the new Fort Des Moines was completed and was occupied by a regiment of United States Cavalry. This post has been occupied almost continuously since its completion by various cavalry units

and more recently as a training station for colored army officers. At present it is being used as a convalescent army hospital.

When the United States entered the European war—or as it is well called, the world war—and it became necessary to establish training camps for the assembling and drilling of the American armies, Des Moines was chosen as the location of one of these camps and it was named Camp Dodge. A small part of the present Reservation had been used for a number of years as a National Guard camp and this was made the basis of the larger National Army Cantonment.

Naturally geographic location has been an important factor in determining the strategic value of the successive army posts which have been established in the vicinity of Des Moines. In Captain Allen's day among the decisive points were the facts that here converged several primitive lines of travel—those along the Des Moines and Raccoon valleys; that the junction of these valleys would afford an excellent camp site—the reservation included only one square mile; and that here timber, grass and other forage and food supplies could be obtained in abundance. When the second Fort Des Moines was established its location was determined by the presence of a fine level stretch of land close enough to drainage lines to allow of excellent sanitation and also close enough to a large and healthily growing city to provide for the social and economic needs of the post. In determining the location of Camp Dodge it was necessary not only to secure space for the accommodation of a great body of troops, many times greater than had ever been stationed here in the past, but also to meet the very important questions of a sufficient supply of pure water and of an adequate system of sewage disposal. Then there is the further problem of available territory in the vicinity of the Cantonment which shall be suitable for the drilling and training of the soldiers-to-be. All of these questions are closely connected with the geography of the region about Camp Dodge and a knowledge of this geography will be helpful in understanding these and the many other problems which arise in connection with the carrying on of military plans. An understanding of the geographic forms of the region and of their mode of origin will serve also to give an added interest to the experiences of camp life and will give a more intelligent outlook upon the natural features about the Cantonment.



FIG. 3.—Looking southeast down Beaver valley from the center of section 34, Jefferson township. The view shows the very gentle slopes and the wide flat floor of the valley—the ancient course of Des Moines river. The village of Johnston is visible in the distance in the valley.



FIG. 4.—Looking north of east across Des Moines valley from the top of the west wall near Dodge City. This shows the steep slopes and the flat valley floor, which is narrower than that of Beaver valley, just to the west, although the river is much larger than the creek.

THE TOPOGRAPHIC MAP

The surface features of Camp Dodge and the surrounding region are well shown on the accompanying map by means of brown lines which are called contour lines. A contour on the ground passes through points having the same elevation above sea level and therefore one who follows a contour goes neither uphill nor down, but always on a level. A line drawn through these points is then a contour line. Where the lines are far apart, as in Beaver valley in and south of Camp Dodge Reservation and in Des Moines valley opposite the mouth of Beaver valley, they show that the land is very flat. Where they are closer together, as along the west wall of Des Moines valley near the Cantonment, they indicate steep slopes. If the lines are relatively straight they indicate a smooth, even surface, but where they are irregular and curve back and forth they show that the surface is cut up by numerous ravines and other irregularities. Good examples of these features are shown within the Cantonment, as for example where the slightly wavy contour lines of the map show the smooth, gently sloping east wall of Beaver valley on which the main part of the Camp is built, a slope which flattens out to the north in the region of the base hospital, near the tiny red triangle which indicates the location of Herrold. The crowded, exceedingly irregular contours marking the west wall of Des Moines valley—the east slope of the dividing ridge—show that this slope is steep and gashed by many gullies and ravines. The remount station, on the west side of Beaver creek, occupies a tract with a very gentle slope from the northwest as is shown by the rather widely spaced contours; while the rifle range, in the wide loop of the river in Des Moines valley at the southeast corner of the Reservation, seems to be on almost level ground, as not a contour crosses it.

On the map of the Camp Dodge region one inch represents approximately one mile of horizontal distance. That is, the scale of the map is about a mile to an inch, or as it is stated on the map, 1:62,500, one inch on the map being equal to 62,500 inches on the ground. The interval between successive contour lines represents a vertical distance of twenty feet. Therefore in passing over the space on the ground represented on the map by the distance between two contour lines one would change his elevation twenty feet.

Military maps, on the other hand, are customarily made on scales of three, six or twelve inches to the mile and the contour interval is twenty, ten or five feet respectively. Such maps are intended to show small areas in great detail, to permit of the insertion of many items of importance in planning battles and campaigns. The ordinary topographic map, such as this of Camp Dodge, covers a large area, on a smaller scale and in less detail, it is true, but it permits the examination of much more territory than does the map of the smaller area and it enables the observer to plan long marches, to select the best routes of travel, even to lay out preliminary railway grades, drainage ditches, sewers and many other improvements.

It will be seen then that a contour or topographic map enables one to determine not only the positions of towns, rivers, roads and other features but also the character of the surface, the height and slope of the hills, the depth and width of the valleys and the shape and size of all topographic forms which can be mapped by means of twenty foot contour lines. Frequent reference to the map with these points in mind will help greatly in understanding the geography of the region about the Camp.

SURFACE FEATURES

To the soldier and the military strategist every element of topography has its special significance and value. True the surface features about Camp Dodge will not be the same as those on the western front, but the features here at home may teach the military man just as effectively as will those over there the lessons he needs must learn and will give him equal opportunity for planning his campaigns and laying his strategy. It can not be impressed too deeply on the mind that an intimate knowledge of topography is one of the essentials to success in military operations, as indeed is true of every form of natural features. For instance in one of the eastern campaigns among the swamps of Russia and East Prussia the Germans, whose expert observers were familiar with swamp vegetation, were able to cross certain swamps because they knew that the plants of these swamps grew up from a sandy bottom. The Russians, on the other hand, were unfamiliar with these conditions and on attempting to cross certain swamps in their vicinity were mired in the soft mud bottoms. Again the violation of Belgian neutrality and the invasion of Belgium and northern France by a power which knew