MEMOIRS OF THE GEOLOGICAL SURVEY. ENGLAND AND WALES. THE GEOLOGY OF THE COUNTRY AROUND DRIFFIELD

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J. R. DAKYNS & C. FOX-STRANGWAYS

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THE GEOLOGY OF THE COUNTRY AROUND

DRIFFIELD.

(EXPLANATION OF QUARTER-SHEET 94 N.W.)
(NEW SERIES, SHEET 64.)

BY

J. R. DAKYNS, M.A.,
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PREFACE.

THE Quarter-Sheet of the Geological Survey Map, described in the following pages, includes more than a third of the high chalk country of Yorkshire known as the Wolds, and likewise an inland portion of the lower district called Holderness.

A small area of Jurassic Rocks is represented at the north-west corner of the Map, but with this exception the whole area lies upon Chalk, which, towards the south and east, is covered with Drift deposits. The Oolitic rocks present some interesting irregularities in their mode of occurrence, the Coralline series, for example, being rapidly overlapped by the Kimeridge Clay, which was much and unevenly denuded before the deposition of the Cretaceous system.

The district of Holderness has already been described in the Survey Memoir on "The Geology of Holderness," to which the reader is referred for the general character and history of the lower ground to the south-east.

ARCH. GEIKIE,
Director-General.

Geological Survey Office,
28, Jermyn Street,
25th October 1886.

NOTICE.

THE larger portion of the country comprised within this Sheet was surveyed by MR. DAKYNS. MR. FOX-STRANGWAYS mapped a strip of country along the northern edge of the Sheet, and a few small areas elsewhere.

MR. HOWELL superintended the mapping of the whole, as District Surveyor.

Only one edition of the Map is published, viz., that showing the Superficial Deposits, with such parts only of the underlying rocks forming the solid geology, as are not concealed by overlying Superficial Deposits.

The Six-inch Geological Survey Maps of Yorkshire included within this Quarter-Street are 143, 144, 145, 160, 161, 162, 177, 178, 179, and the southern parts of, 125, 126, 127. These are not published; but M.S. Coloured Copies are deposited in the Geological Survey Office.

H. W. BRISTOW,
Senior Director.

Geological Survey Office,
28, Jermyn Street, S.W.,
20th October 1886.

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CHAPTER I.

INTRODUCTION.

The district comprised within this Map includes a large portion of the Chalk Wolds, in fact more than a third, with the neighbouring low grounds to the east of Driffield and of North Grimston.

The area contained is 216 square miles. Driffield is the only town; but there are several important villages, the principal being Nafferton, Lowthorpe, Burton Agnes, Kilham, Rudston, Langtoft, the Luttons, Sledmere, Kirby Grindalythe, Duggleby, Wharram-le-Street, Fridaythorpe, Huggate, Wetwang, Garton, North Dalton, Hutton Cranswick, Foston, North Frodingham and Beeford.

There are no rivers of importance. The largest is the river Hull, which, with its numerous tributary becks, drains the south-east corner of the area; and, by the aid of a canal for a portion of the distance, allows of the navigation being continued from the Humber to Driffield.

In the north-west corner the small streams flowing from the base of the Chalk run in the first instance north and east to join the Derwent above and below Malton, and thence south to the Humber; while the valleys in the south-west, although they are now dry, fall in the same direction.

Throughout the greater part of the district in which the Chalk forms the surface, there are, from its porous nature, no perennial surface streams. The larger valleys which are usually dry during the summer have intermittent brooks or "gipsey" races; but powerful springs burst out along the east foot of the Wolds, showing that there is a copious underground drainage, although but little water is seen at the surface.

Crossing the northern edge of the district is the Gipsey Race, which rises not far from the western escarpment near Wharram, and flows east along the great Wold valley to the sea at Bridlington Quay, having entered this area again near Rudstone.

The watershed of the country apparently follows the line of high ground crossing the western edge of the Map from Settrington Wold by Wharram to Burdale Tunnel, thence running west to the escarpment above Acklam, and again southerly to Huggate Wold, and east of Warter. Whether the underground water parting exactly coincides with this line there is no means of judging, as the contour of the impervious beds below is unknown.

The highest ground is near Huggate, where the Wolds attain an altitude of over 700 feet; but the Chalk maintains nearly this level along the western edge of the Map, being about 650 feet at Settrington, and over 600 feet on Warter Wold. From this elevation the ground declines gradually to the south-east till it reaches the flat land beyond Driffield, which averages from 15 to 50 feet above the sea. The lowest ground in the north-west corner is only about 200 feet above sea-level, consequently the Chalk escarpments about here are very steep.

Table of Formations.

The geological formations found within the area of this Map are:—

Post Tertiary	Post-Glacial and Glacial Beds	Recent Alluvium.
		Warp? or older Alluvium.
		Valley Gravels and Gravel Terraces.
		Boulder Clay.
		Interglacial Sand and Gravel (Marine).
		Boulder Clay.
Secondary	Upper Cretaceous	Upper Chalk (Chalk without Flints).
		Middle Chalk (Chalk with Flints).
		Lower Chalk (Grey Chalk without Flints).
		Red Chalk.
	Lower Cretaceous	Ferruginous Sands (Neocomian Beds?)
	Upper Oolite	Kimeridge Clay.
	Middle Oolite	The Cement Stone (Argillaceous Limestone and Shale).
		Coralline Oolite (Oolitic Limestone and Coral Rag).
		Passage Beds.
		Calcareous Grit.