

**MEMOIRS OF THE GEOLOGICAL
SURVEY. ENGLAND AND WALES.
THE GEOLOGY OF THE COUNTRY
AROUND ATTLEBOROUGH,
WATTON, AND WYMONDHAM**

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Attleborough, Watton, and Wymondham by F. J. Bennett

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F. J. BENNETT

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MEMOIRS OF THE GEOLOGICAL SURVEY.

ENGLAND AND WALES.

**THE GEOLOGY OF THE
COUNTRY AROUND
ATTLEBOROUGH, WATTON, AND
WYMONDHAM.**

(EXPLANATION OF QUARTER-SHEET 66 S.W.)

BY

F. J. BENNETT, F.G.S.

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NOTICE.

A large part of the County of Norfolk has been already described in the Memoir "On the Geology of the Country around Norwich," published in 1881, to accompany the North-Eastern and South-Eastern quarters of Sheet No. 66 of the One-inch Map of the Geological Survey of England and Wales. The present Memoir describes the South-Western quarter of the same sheet. It has not been thought necessary to repeat descriptions and references already fully given in the Norwich Memoir. The entire area described in the following pages lies upon Chalk, concealed under a nearly continuous covering of superficial deposits. Perhaps the most interesting topographical features are the small lakes or "meres" lying on the Chalk along its western borders, and explained by Mr. Bennett as marking the water-level of saturation in the Chalk.

It was in this district that the remains of the fresh-water tortoise (*Emys lutaria*) were first found in Britain as far back as the year 1836. Their discovery has recently been corroborated by the occurrence of similar remains in the Mundesley river-bed in Norfolk, which have been described by Mr. E. T. Newton.

Geological Survey Office,
London,
November 1884.

ARCH. GEIRIE,
Director-General.

NOTICE.

The area embraced within the Map here described lies entirely within the County of Norfolk, and was surveyed, during the years 1881-83, by Mr. F. J. Bennett, under the superintendence of Mr. H. B. Woodward. The fossils obtained from the Chalk have been named by Messrs. G. Sharman and E. T. Newton.

Only one Edition of this Map is published—that showing the Superficial deposits.

A full account of the geological literature of the County is given in the Geological Survey, Memoir "On the Geology of the Country around Norwich," 1881.

H. W. BRISTOW,
Senior Director.

Geological Survey Office,
28, Jermyn Street, London, S.W.,
November 1884.

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THE GEOLOGY

OF THE

COUNTRY AROUND ATTLEBOROUGH, WATTON, AND WYMONDHAM.

INTRODUCTION.

Area.—The tract to be described embraces an area of about 205 square miles in the southern part of Norfolk, and includes the towns of Attleborough, Wymondham, Watton, Hingham, and East Harling.

Rivers.—The river Thet, which rises at Besthorpe, in the Decoy Common, drains nearly the whole of the southern half of the district, and a portion of the northern half, in a course of about 10 miles; and from Harling to Bridgeham (where it leaves the area) it becomes a fairly broad stream.

On the north it receives small tributaries from Great Ellingham, Rockland All Saints, and Stow Breckles; on the west it receives tributaries from Breckles Heath, East Wretham, and Roudham Car; on the east it receives tributaries from near Besthorpe, Old Buckenham fen, and New Buckenham; and on the south it receives a tributary from Kenninghall and Quiddenham.

The north-west corner of the district is drained by two streams, both of which join the Wissey in the area of Sheet 65. One rises at Sculton Mere, then flows west to Watton and Threxton, and leaves the area one mile and a quarter north-west of Threxton; the other rises at Merton, flows south to Thompson, then west to Tottington and Sturston, where it leaves the area. The tract comprised in the north-eastern corner of the map is drained by the Tiffey at Wymondham, rising three miles to the south-east of that town, with a tributary at Ashwell Thorpe and Wattlefield, called the Bays River; by another one at Wicklewood, called the Dyke Beck; and a third stream which, rising at Sea-Mere, near Hingham, and flowing by Hackford and Crownthorpe, runs into the Kimberly Lake by Falstaff Wood. The Tiffey expands into the lake and joins the Yare at Barford, in the adjoining area of Sheet 66 N.W.

The south-east corner of the area is drained by a stream which rises at Bunwell, Carlton Rode, and Tibbenham, and leaves the district just north of Aslacton.

Formations.—Were the Drift not shown on this map, the whole area would be coloured as Chalk; but this formation is only to be seen to the west and south, where the Thet has cut through the overlying drift deposits, and in a small inlier of Chalk which occurs north-west of Watton.

The extreme irregularity in the occurrence of the Boulder Clay and gravel has made the mapping of them a matter of great difficulty; and this has been much increased by the wide-spread covering of sand which obscures the beds in the western part of the area.

The following column shows the various strata met with in this district:—

Recent and Post Glacial.	} Alluvial Deposits	{	Alluvium.
			River Gravel.
Glacial Drift	- - -	{	Boulder Clay.
			Gravel and sand.
Cretaceous	- - -	-	Chalk.

Towns.—Wymondham stands on the top and on the slope of a sharp rise, composed of the coarse gravel which generally rests on Boulder Clay.

Attleborough stands on gently rising ground, capped with gravel resting on Boulder Clay. The gravel is very variable in thickness, and was at one time worked north of the town; its greatest depth seems to have been 10 feet. Owing to the irregular thickness of the gravel and to its clay base, the water supply is in some cases contaminated with the sewage. After a continued rainfall many of the cellars in the houses are filled with water. The gravel on the south-west of the town ends against Boulder Clay.

Hingham stands on rising ground, composed of Boulder Clay, with a loamy top in places. As far as I could judge, the water supply must come from the clay, or from seams of gravel and sand in it, as I have not been able to find any superficial covering of gravel.

Watton stands wholly on Boulder Clay of no great thickness, as the wells seem to be sunk through it to the Chalk beneath. New Buckenham seems also to stand partly on a patch of gravel over Boulder Clay and partly on Boulder Clay.

Kenninghall stands partly on gravel over Chalk, partly on Chalk, and partly on Boulder Clay.

Banham stands on high ground and mostly on loam overlying Chalk; a portion of the town is on Boulder Clay.

East Harling is situated partly on Chalk and partly on gravel.

CHALK.

The exposure of the Chalk in this area is almost entirely confined to its south-western portion. In no instance does it come to the surface entirely free from any superficial covering, as it occurs near the surface, just where the sand-covering predominates.* These small Chalk areas may be grouped according to the valleys in which they occur. The Chalk of Saham Tony is grouped with the "Medial Chalk" of Samuel Woodward.

1.—Valley of the Wissey.

One mile W.S.W. of Saham Tony Church a lime-kiln, marked on the map, shows 25 feet of thin-bedded chalk with lines of nodular flints; half a mile east of this is another pit, now much grown over, but evidently once worked for chalk. The Chalk here contains *Micraster coranguinum*, and fragments of *Inoceramus*.

At Lime-Kiln Farm, half a mile west of the former kiln, and 1½ miles west of Saham Tony Church (also marked on the map), is another very large pit, which is still worked for lime, the former pit being now abandoned. It shows 35 feet of soft thick-bedded chalk, with bands of nodular flint.

The following fossils were obtained by Mr. J. Rhodes, the Fossil-Collector of the Geological Survey:—

Inoceramus Lamarckii, Park.
 " *involutus*, Sow.
 (fragments).
Pecten nitidus, Mont.
Spondylus.

In the museum of the Geological Society of London is a specimen of *Ptychodus mammillaris*, Ag., from the same locality.†

2.—Western Tributary Valley of the.

In the Tributary valley in which Wretham Park is situated, there are a few Chalk pits.

About half a mile north-east of the Hall is a pit that has been rather largely worked, showing 15 feet of soft rubbly Chalk. Another one, half a mile north-west of the Hall (marked on the map as a lime-kiln), shows rubbly Chalk burnt for lime. There is also another pit a quarter of a mile due west of the Hall.

The railway-cutting south of Wretham Station also shows soft rubbly Chalk. The valley east of East Wretham is in Chalk all the way to the junction with the main stream.

Half a mile south-west of Shropham Church, and a quarter of a mile north of Brad Car Hall Farm, is a large pit showing 20 feet of soft Chalk, capped by Boulder Clay &c., with pipes of sand.

The valley in which the sheets of water called Langmere and Round Mere are situated is in Chalk, but it shows no sections worthy of mention.

* For a description of this sand, see p. 15.

† See also S. Woodward, *Geology of Norfolk*, p. 50; and C. B. Rose, *Proc. Geol. Assoc.*, vol. i., p. 226.