believe may have likewise belonged to a Brachyuran Decapod from the Pendleton Colliery, near Manchester, I have felt greater confidence in the determination of the Belgian fossil, and in considering it as constituting the abdomen of a true crab.

The most ancient short-tailed crab hitherto known is the *Palæinachus longipes* from the (Forest Marble) Great Oolite, Malmesbury, Wiltshire, which I described in 1866.¹

The discovery of this fossil, therefore, removes the origin of the Decapoda-Brachyura to an epoch in geological time far anterior to that hitherto recorded, and serves to show well how little reliance can be placed upon merely negative evidence.

In the absence of other remains which might serve to complete our knowledge of the animal we have ventured to describe, it would be premature to attempt to show its affinities with any existing form or to give it a name indicative of its relationship. I prefer, therefore, to designate it as *Brachypygæ carbonis*, for in the event of the discovery of more complete remains which would enable us satisfactorily to determine the modern representatives of this interesting species, the name (if calculated to mislead) would of necessity at once become a burden to synonymy.

EXPLANATION OF PLATE XI.

Brachypygæ carbonis, H. Woodw. From the Coal-measures, 'Belle-et-Bonne' Colliery, near Mons, Belgium.

FIG. 1.—Figure enlarged ten times. | FIG. 2.—Figure of the natural size.

II.—THE FOSSIL BRACHIOPODA OF THE LOWER BOULONNAIS.

THE following carefully and elaborately prepared list of the fossil Brachiopoda of the Lower Boulonnais has been forwarded to the Editor for publication by his esteemed friend and frequent contributor Thomas Davidson, Esq., F.R.S., who writes as follows:—"At my request M. E. Rigaux (51, Grande Rue, Boulogne-sur-mer, France) has been engaged for more than two years in drawing up a complete summary of all the Brachiopoda that are to be found in the various formations composing the Lower Boulonnais.

"This list is of great importance as so many of the beds correspond completely with our own, and are extremely rich in a palæontological point of view.

THOMAS DAVIDSON.

"3, LEOPOLD ROAD, BRIGHTON, 7th August, 1878."

LIST OF FOSSIL BRACHIOPODA FOUND IN THE LOWER BOULONNAIS.

By Monsieur E. RIGAUX.

DEVONIAN.

Terebratula sacculus, Mart. Very common in the shales of Beaulieu, scarce in the Ferques limestone.

Spirigera concentrica, D'Orb. Very common in the highest beds of the Ferques limestone; Blacourt, Beaulieu.

Spirigera Pelapayensis, D'Orb. Rather common in the shaly beds over the Blacourt limestone in the Cédule quarry, scarcer in the Ferques limestone at Blacourt.

¹ Quart. Journ. Geol. Soc. vol. xxii. p. 494.

Spirigera Davidsoni, R. Is found only in the shales over the Blacourt limestone at Couderousse. •

Spirifer Verneuilli, Murch. Very common in all the Devonian shales and limestones, offers several varieties; in the limestones the wings are short, and the beak strongly incurved; in the shaly beds the wings are very long, the area wide, and the beak not recurved; the variety *Archiachi* is found only in the higher beds of the Ferques limestone.

Spirifer Bouchardi, Murch. This species is found under varying forms at three levels; in the shales of the Cédule quarry it is depressed, larger, and the two ribs that limit the sinus are not so strong as in the second variety which is common at Couderousse; the typical form figured by Murchison is only found in a particular bed of the Ferques limestone.

Spirifer Urii, Dav. Scarce, Beaulieu shales.

Spirifer Sauvagei, R. Scarce; is found in the Beaulieu shales with the two following species in the level of *Strept. elegans*.

Spirifer Legayi, R. Common at Beaulieu.

Spirifer Barroisi, n. sp. Scarce, Beaulieu. This species is very near to *Sp. Legayi*, from which it differs by a less transverse form, a narrower sinus, laminæ of growth not so strong, but closer and more numerous.

Spirifer undiferus, Schn. Very scarce, Beaulieu.

Cyrtina heteroclyta, Dav. Rather common at the lowest part of the Beaulieu shales, does not seem to go higher than the level of *Strept. Bouchardi*.

Cyrtina Demarlii, Dav. Scarce, Beaulieu shales.

Spirigerina reticularis, D'Orb. This is a very common species, and offers several varieties; Ferques, Blacourt, Beaulieu.

Spirigerina aspera, M'Coy. Common, Ferques.

Spirigerina longispina, Bouch. Is only found in the sandy limestone band over the Ferques limestone.

Rhynchonella Lummatoniensis, Dav. Occurs in the Beaulieu shales.

Rhynchonella acuminata, Mart. A variety of this species is very abundant in the shales with *Strept. elegans*; Beaulieu.

Rhynchonella Boloniensis, D'Orb. Common in the upper part of the Ferques limestone, and in the sandy limestone over it; Beaulieu.

Pentamerus brevirostris, Phil. Is found commonly in a small calcareous band below the Ferques limestone.

Orthis striatula, D'Orb. Common everywhere, Ferques, Beaulieu.

Orthis Deshayesii, Bouch. Very common in the level of *Strept. Bouchardi*.

Orthis Dumontiana, Vern. Common in the same bed.

Orthis Eifeliensis, Sch. Scarce, is found with *Pent. brevirostris* at Beaulieu.

Streptorhynchus Devonius, Dav. Common at the highest part of the Ferques limestone.

Streptorhynchus elegans, Bouch. Very common, distinguishes a particular level in the Beaulieu shales.

Streptorhynchus Bouchardi, R. Very common, Beaulieu shales.

Strophomena latissima, Bouch. Very common in the sandy band over the Ferques limestone.

Strophomena Gosseletii, R. Rather scarce, Beaulieu shales.

Leptæna Dutertreei, Murch. Very common in the highest part of the Ferques limestone.

Leptæna Ferquensis, R. Very common, Beaulieu shales.

Leptæna Cedule, R. Very common, lowest part of the Beaulieu shales.

Leptæna Fischeri, Vern. Common, Beaulieu shales.

Chonetes armata, Bouch. Very common over the Ferques limestone.

Strophalosia productoides, King. Very scarce, Ferques, Beaulieu.

Productus subaculeatus, Murch. Common in every bed, Ferques.

CARBONIFEROUS LIMESTONE.

Terebratula hastata, Sow. This species is found in great numbers in a bed from the highest part of the white limestone, Napoleon quarry.

Athyris Boissyi, M'Coy. This species has been found by Mr. Dutertree at Hardinghem in the Black quarry, which is now full of water.

Spirifer laminosus, M'Coy. Occurs sparingly in the white limestone at Hydrequent.

Spirifer glaber, Mart. Very common in the bed with *T. hastata*.

Productus Cora, D'Orb. This species is found in the lower limestone of the La Côte and Malassise quarries; it is more common in the Haut-banc limestone.

Productus semireticulatus, Mart. Common in the bed with *Tr. hastata*, was also formerly found in the Black quarry.

Productus giganteus, Mart. There occur in a small quarry near Ferques, and in another near Hardinghem, crushed specimens of a large *Productus* which Mr. Gosselet refers to this species.

BATHONIAN.

Terebratula maxillata, Sow. This species occurs sparingly in the Great Oolite at Hydrequent and in the Cornbrash, Le Wast.

Terebratula submaxillata, Dav. This species is confined within the lower beds of the Great Oolite; Hydrequent.

Terebratula globata, Sow. Very common in the lower part of the Great Oolite at Hydrequent, is found also in the Marquise Oolite; the variety *Fleischeri*, Opp., occurs unfrequently in the Cornbrash at Le Wast.

Terebratula intermedia, Sow. Very common in the Cornbrash; Le Wast, Lenlinghem.

Terebratula coarctata, Park. Very scarce, Cornbrash, Le Wast.

Terebratula hemispherica, Sow. I have found a single specimen in the Cornbrash; Le Wast.

Waldheimia obovata, Sow. Very common; the variety *Siddingtonensis* in the Great Oolite at Hydrequent; the varieties *perobovata*, *subobovata* and *Stiltonensis* in the Cornbrash at Le Wast.

Waldheimia lagenalis, Schl. Common in the Cornbrash with the variety *sublagenalis*.

Waldheimia cardium, Lam. Very scarce, Cornbrash; Le Wast, Lenlinghem.

Rhynchonella concinna, Sow. Common in the Hydrequent limestone.

Rhynchonella Hopkinsi, M'Coy. Very common in the Great Oolite of Marquise; a single specimen from the Cornbrash at Le Wast.

Rhynchonella elegantula, Bouch. Very common in the marly limestone between the Cornbrash and Great Oolite; Le Wast, Marquise.

Rhynchonella Badensis, Opp. Very common in the Cornbrash, Le Wast; a single specimen from Hydrequent, in the lower part of the Great Oolite.

Rhynchonella Morieri, Dav. Very common in the Cornbrash; Le Wast, Marquise.

Rhynchonella varians, Sow. var. We find in the Cornbrash at Rinxent a small form which we refer to this species.

OXFORD CLAY AND LOWER CALC GRIT.

Waldheimia umbonella, Lam. Very common at Belle; a single specimen from the clays at Le Wast.

Rhynchonella socialis, Phill.

Rhynchonella Leedsii, Walk. These three species are found in the ferruginous Oolite (Kelloway Rock), over the Cornbrash at Belle and Alinethun.

Waldheimia impressa, Buch. Occurs in great numbers in the clays at Le Wast; one specimen has been found in the Coral Rag at Carly.

Terebratula insignis, Sow. Scarce in the Calcaire and Houlefort (Elsworth rock); it is more common in the calcareous band over it at Rety, and is very abundant in the Calcaire du Mont des Boucards.

Waldheimia bucculenta, Sow. Very scarce, I have found six specimens in the Calcaire du Mont des Boucards.

Rhynchonella pectunculoides, Et. Very common in the lowest beds of the Calcaire du Mont des Boucards.

Rhynchonella myriacantha, Desl. I have found a single specimen in the clays at Blèquenèque.

Rhynchonella spathica, Lam. Very common in the *Ter. impressa* beds; Le Wast.

CORALLINE AND SUPRACORALLINE BEDS.

Terebratula insignis, Sch. Ends in the Supracoralline Oolite at Hesdin l'Abbé with forms which show a transition between this species and *T. subsella*.

Terebratula subsella, Leym. Shows itself at first in the Supracoralline Oolite at Hesdin l'Abbé, and goes up in the Kimmeridge beds.

Terebratula globata? Sow. The Oolite of Hesdin l'Abbé contains a biplicated *Terebratula*, which I cannot distinguish from our Great Oolite *globata*.

Waldheimia humeralis, Röm. I have sometimes quoted this species under the name of *T. bucculenta*, which I apply now to another species at a lower level; it appears in the Coral Rag proper at

Carly, but is more abundant in the Supracoralline Oolite of Hesdin l'Abbé.

Rhynchonella pectunculoides, Et. This species goes up into the Coral Rag; Carly.

Rhynchonella pinguis, Röm. This species is found in the Coral Rag, Carly, and in the Supracoralline Oolite; Hesdin l'Abbé.

Rhynchonella inconstans, Sow. Very scarce, I have found it only in the Grès de Questrecques, the highest Supracoralline bed.

Thecidium ornatum, Moore. Mr. Davidson first found this species on a *Ter. humeralis* from the Carly Coral Rag, and since I have obtained some other specimens, but it is rather scarce.

KIMMERIDGE CLAY.

Lingula ovalis, Sow. This species was discovered by Mr. J. E. H. Peyton, F.G.S., near the base of the shales in the cliffs of Boulogne;¹ it is very common. I have also found in the Portland shales remains of a *Lingula* which belong probably to the same species.

Terebratula subsella, Leym. Is rather common in the lower part of the Kimmeridge. Cliffs of Moulin Wibert, Chatillon.

Waldheimia humeralis, Röm. I refer with doubt to this species, some small smooth *Terebratula* found by Mr. Beaugrand in the Lower Kimmeridge beds; Moulin Wibert.

Rhynchonella pinguis, Röm. Very scarce; two or three specimens have been found in the lowest beds in the cliff of Moulin Wibert.

PORTLANDIAN.

Discina latissima, Sow. I have found good specimens of this species in the shales that overlie the grits with *A. gigas* in the cliffs at La Crèche and Le Portel; it is rather common.

Waldheimia Boloniensis, R. S.

Waldheimia humeralis, Röm.

Rhynchonella subvariabilis, Dav. These three very scarce species are found in the Middle Portland beds with *Ostrea expansa*; Tour Croy, Alpreck.

LOWER GREENSAND.

Waldheimia pseudojurensis, Leym.

Rhynchonella Gibbsiana, Sow. These two very scarce species have been found by Mr. Bouchard in the sands under the Gault with *Amm. mammillaris*; Locquinghem.

GAULT.

Terebratula praelonga, Sow. Occurs in the phosphatic bed under the Gault; Fiennes, Lottinghem.

Rhynchonella Gibbsiana, Sow. In phosphatic nodules, Fiennes.

Rhynchonella lineolata, Phill. I have some internal casts from Fiennes which seem to belong to this species.

CHALK MARL.

Magas Geinitzii, Schl. This species has been found by Mr. Barrois at Licques and at Blanez.

¹ See GEOL. MAG., 1873, Vol. X. p. 574, with a woodcut figure.

Terebratella truncata, Sow. We refer to this species some small specimens which occur rarely in the Cement Chalk at Neufchatel, but Mr. Barrois looks upon them as belonging to a new species.

Kingena lima, Dav.

Terebratulina striata, Wahl.

Terebratulina rigida, Sow.

PALÆOZOIC BRACHIOPODA FOUND IN THE LOWER BOULONNAIS.	DEVONIAN.							CARBON- IFEROUS.	
	Blacourt Limestone.	Beaulieu Shales.				Ferques Limestone.	Sandy Limestone.	Lower Limestone.	Upper Limestone.
		<i>Spirig. Davidsoni</i> Shales.	<i>Strept. Bouchardi</i> Clay.	<i>Strept. elegans</i> Mart.	<i>Pent. brevirostris</i> Limestone.				
<i>Terebratula sacculus</i> , Mart.				x	x				
<i>hastata</i> , Sow.									x
<i>Spirigera concentrica</i> , D'Orb.						x	x		
<i>Pelapayensis</i> , D'Orb.	x					x			
<i>Davidsoni</i> , R.		x							
<i>Roissyi</i> , D'Orb.									x
<i>Spirifer Verneuilli</i> , Murch.	x			x	x	x	x		
<i>Bouchardi</i> , Murch.	x	x	x			x			
<i>Urii</i> , Dav.		x	x						
<i>Legayi</i> , R.				x					
<i>Sauvagei</i> , R.				x					
<i>Barroisi</i> , n. sp.				x					
<i>undiferus</i> , Sch.						x			
<i>laminosus</i> , M'Coy									x
<i>glaber</i> , Mart.									x
<i>Cyrtina heteroclita</i> , Dav.	x	x	x						
<i>Demarlii</i> , Bouch.				x					
<i>Spirigerina reticularis</i> , D'Orb.					x	x			
<i>longispina</i> , Bouch.							x		
<i>aspera</i> , M'Coy									
<i>Rhynchonella Lummatoniensis</i> , Dav.			x						
<i>acuminata</i> , Mart.				x	x				
<i>Boloniensis</i> , D'Orb.						x	x		
<i>Pentamerus brevirostris</i> , Phil.					x				
<i>Orthis striatula</i> , D'Orb.	x	x		x	x	x	x		
<i>Deshayesii</i> , R.			x						
<i>Dumontiana</i> , Vern.			x						
<i>Eijeliensis</i> , Sch.					x				
<i>Streptorhynchus Devonicus</i> , Dav.						x			
<i>elegans</i> , Bouch.				x					
<i>Bouchardi</i> , R.			x						
<i>Strophomena latissima</i> , Bouch.							x		
<i>Gosseletii</i> , R.			x						
<i>Leptaena Dutertrii</i> , Murch.						x	x		
<i>Ferquensis</i> , R.			x						
<i>Cedulae</i> , R.	x								
<i>Fischeri</i> , Vern.			x						
<i>Productus subaculeatus</i> , Murch.	x	x	x	x	x	x			
<i>Cora</i> , D'Orb.								x	x
<i>semireticulatus</i> , Mart.									x
<i>giganteus</i>									x
<i>Strophalosia productoides</i> , King.					x	x			
<i>Chonetes armata</i> , Bouch.						x			

DISTRIBUTION OF OOLITIC BRACHIOPODA IN THE LOWER BOULONNAIS.	Lower Great Oolite.	Upper Great Oolite.	Cornbrash.	Kellway Rock.	Oxford Clay.	Lower Grit.	Coraline Lime- stone.	Supracoraline.	Kimmeridge Clay.	Portlandian.
<i>Lingula ovalis</i> , Sow.									x	
<i>Discina latissima</i> , Sow.										x
<i>Thecidium ornatum</i> , Moore							x			
<i>Terebratula maxillata</i> , Sow.	x		x							
<i>submaxillata</i> , Dav.	x									
<i>intermedia</i> , Sow.			x							
<i>insignis</i> , Sch.						x		x		
<i>globata</i> , Sow.	x	x	x					x		
<i>hemispherica</i> , Sow.			x					x		
<i>coarctata</i> , Park.			x							
<i>subsella</i> , Sow.								x	x	
<i>Boloniensis</i> , R. S.										x
<i>Waldheimia lagenalis</i> , Sch.			x							
<i>umbonella</i> , Lam.				x	x					
<i>obovata</i> , Sow.	x		x							
<i>bucculenta</i> , Sow.						x				
<i>impressa</i> , Buch.					x					
<i>humeralis</i> , Röm.							x	x	x	x
<i>cardium</i> , Lam.			x							
<i>Rhynchonella concinna</i> , Sow.	x									
<i>Hopkinsi</i> , M'Coy		x								
<i>elegantula</i> , Bouch.			x							
<i>Badensis</i> , Oph.			x							
<i>Morieri</i> , Dav.			x							
<i>varians</i> , (var.)			x							
<i>Leedsii</i> , Walk.				x						
<i>socialis</i> , Phil.				x						
<i>spathica</i> , Lam.					x					
<i>myriacantha</i> , Desl.					x					
<i>pectunculoides</i> , Et.						x	x			
<i>pinguis</i> , Röm.							x	x	x	
<i>inconstans</i> , Sow.								x		
<i>subvariabilis</i> , Dav.										x
DISTRIBUTION OF CRETACEOUS BRACHIOPODA IN THE LOWER BOULONNAIS.	Lower Greensand.				Gault.		Upper Greensand.		Chalk Marl.	
<i>Magas Geinitzii</i> , Schl.									x	
<i>Terebratella truncata</i> , Sow.									x	
<i>Kingena lima</i> , Dav.									x	
<i>Terebratulina striata</i> , Wahl.									x	
<i>rigida</i> , Sow.									x	
<i>Terebratula biplicata</i> , Sow.							x			
<i>praelonga</i> , Sow.					x					
<i>semiglobosa</i> , Sow.									x	
<i>squamosa</i> , Mant.									x	
<i>sulcifera</i> , Mor.									x	
<i>Waldheimia pseudopurensis</i> , Leym.		x								
<i>Rhynchonella Gibbsiana</i> , Sow.		x								
<i>lineolata</i> , Phill.					x					
<i>Martini</i> , Mant.									x	
<i>Grasiana</i> , D'Orb.									x	
<i>Mantelliana</i> , Sow.									x	

Terebratula squamosa, Mant. These four species are very common in the Chalk Marl at Blanez and Neufchatel.

Terebratula buplicata, Sow. Occurs in the Glauconitic bed above the Gault; Blanez.

Terebratula sulcifera, Morris. Seems to be very scarce; I know only two specimens which Prof. Gosselet has had the kindness to send me; Blanez.

Terebratula semiglobosa, Sow.

Rhynchonella Martini, Mant.

Rhynchonella Grasiana, D'Orb.

Rhynchonella Mantelliana, Sow. These four species are very common in the Chalk Marl at Blanez and Neufchatel.

III.—SUPPLEMENTARY NOTE TO "PLEISTOCENE MAMMALS DREDGED OFF THE EASTERN COAST."¹

By WILLIAM DAVIES, F.G.S.,
of the British Museum.

(PLATE XII.)

THE late Dr. Falconer figured in the "Fauna Antiqua Sivalensis," a fine lower jaw of an adult *Elephas primigenius*, preserved in the National Collection, and of which he gives two views, the first as seen from above, the second a side view; and in the descriptions of the plates in the above work given in his "Palæontological Memoirs," vol. i. p. 439, occurs the following note regarding it: "Plate xiii. A. fig. 3.—*E. primigenius*. English fossil specimen, with two last true molars on either side. In the last left molar there are eighteen plates in 7·7 inches. The jaw has a short beak, and one inner mentary foramen on either side. In this, as in figs. 1 and 2, representing the jaw at different ages, it is to be noted that the opposite lines of molars are more or less convergent instead of being parallel, or nearly so, as laid down by Cuvier.

"Extreme length of jaw, 23·6 in. Divergence of rami behind, 21·3 in. Height at alveolus, 7·2 in. Greatest width of jaw, 6·3 in. Breadth of condyle, 10·3 in., width of last molar, 2·8 in."

To the above description may be added, that although the ascending rami are well preserved, the condyles and coronoids on each side are wanting.

Besides the fact that it is a dredged specimen, which is evident from the marine exuvie still adhering to it, and that Dr. Falconer had selected it for illustration as a type of the mandible of a mature adult animal of the above species, not anything was known respecting its history, or whence it came, by the present officials of the Palæontological Department; nor beyond the statement that it is an "English fossil specimen" does Dr. Falconer throw any light upon its history, if he ever knew it. But some time ago, looking through a volume of the "Magazine of Natural History," edited by Mr. Edward Charlesworth, F.G.S., I found a woodcut of the fossil, and a short notice regarding it by the editor, both of which we here reproduce.

"The fossil elephant's jaw represented in the accompanying figure

¹ See GEOL. MAG., 1878, Decade II. Vol. V. p. 97.