

Middle or Brown Jura (Dogger).	Upper 20-100 ft.	Clays, shales, and ferruginous oolite with at the top the zone of <i>Amm. (Macrocephalites) macrocephalus</i> , equivalent to the Callovian or Kellaways rocks, and at the bottom that of <i>Amm. Parkinsoni</i> .
	Middle 50 ft.	"Bifurcatus-schichten" with <i>Amm. (Cosmoceras) bifurcatus</i> . These "Bifurcatus beds," with the Hauptrogenstein above them, including the zones of <i>Oppellia fusca</i> and <i>O. aspidoides</i> , form the Bathonian stage. ⁸² "Coronatus-schichten," clays with <i>Amm. (Stephanoceras) humphriesianus</i> , <i>A. Blagdeni</i> , <i>A. Braikenridgei</i> , and many corals of the genera <i>Montlivaltia</i> , <i>Thecosmilia</i> , <i>Cladophyllia</i> , <i>Isastræa</i> , <i>Confusastræa</i> and <i>Thamnastræa</i> . ⁸³ Ostrea limestone with <i>Ostrea Marshi</i> , <i>O. eduliformis</i> , <i>Trigonia costata</i> . Clays with <i>Belemnites giganteus</i> .
	Lower up to 500 ft.	Shales, sandstones and ironstones, with <i>Inoceramus polyplocus</i> , <i>Amm. (Harpoceras) Murchisonæ</i> , <i>Pecten personatus</i> . Clays and shales with <i>Amm. (Harpoceras) opalinus</i> , <i>A. torulosus</i> , <i>Trigonia navis</i> .
Lower or Black Jura (Lias).	Upper 30 ft.	Gray marls with <i>Amm. (Lytoceras) jurensis (Jurensis-Mergel)</i> , <i>A. (Harpoceras) radians</i> . Bituminous shales (<i>Posidonien-Schiefer</i>) with <i>Amm. lythenensis</i> , <i>A. communis</i> , <i>A. bifrons</i> , <i>Posidonia Bronni</i> .
	Middle 80-100 ft.	Clays with <i>Amm. spinatus</i> , <i>A. (Amaltheus) margaritatus</i> , <i>Belemnites paxillosus</i> . Marls and limestones with <i>Amm. capricornus</i> , <i>A. Davœi</i> . Dark clays and ferruginous marls with <i>A. brevispina</i> , <i>A. Jasoni</i> , <i>A. ibex</i> , <i>A. Jamesoni</i> , <i>Terebratula numismalis</i> .
	Lower 100-115 ft. ⁸⁴	Clays with <i>Amm. obtusus (Turneri)</i> , <i>A. Oxynotus</i> , <i>A. rari-costatus (Oxynotenlager)</i> . Oil shales and Pentacrinus beds resting on gryphite limestone with <i>Amm. (Arietites) Bucklandi</i> , <i>A. Conybeari</i> , <i>Gryphæa arcuata</i> , <i>Lima gigantea</i> , <i>Spiriferina Walcottii (Arietenschichten)</i> . Sandstones with <i>Amm. angulatus (Angulatenschichten)</i> , <i>Cardinia Listeri</i> . Dark clays, sandy layers and limestone with <i>Amm. planorbis (psilonotus) Pylonotenkalk</i> .

In lithological characters the German Lower or Black Jura presents many points of resemblance to the English Lias. Some of the shales in the upper division are so bituminous as to be workable for mineral oil. With the general succession of organisms also, so well worked out by Oppel, Quenstedt, and others, the English Lias has been found to agree closely.

⁸² For an account of the fauna of this stage in the upper Rhenish lowland see A. O. Schlippe, *Abhand. Geol. Specialkart. Elsass-Lothr. IV. Heft. iv.* 1888.

⁸³ G. Meyer, "Korallen des Doggers," *Abhand. Geol. Specialkart. Elsass-Lothr. IV. Heft v.* 1888.

⁸⁴ For an account of this stage see J. A. Stuber, *Abhandl. Geol. Specialkart. Elsass-Lothr. V. ii.* 1893.