

## MANTELL, CUVIER, BUCKLAND AND THE IDENTIFICATION OF *IGUANODON* : A CORRECTION

Eric BUFFETAUT

CNRS, 16 cour du Liébat, 7013 Paris, France

**Abstract** : Contrary to what was claimed by the author in a previous paper, Cuvier did use the name *Iguanodon* in his palaeontological works, both in the third edition (and subsequent ones) of his *Discours sur les révolutions de la surface du globe* (1825), and in the captions of figures illustrating teeth from Tilgate Forest in the last edition of *Recherches sur les ossemens fossiles*. However, the name *Iguanodon* never appeared in the main text of the *Recherches*.

### Mantell, Cuvier, Buckland et l'identification d'*Iguanodon* : une correction.

**Résumé** : Contrairement à ce que l'auteur a avancé dans un article précédent, Cuvier a bien utilisé le nom *Iguanodon* dans ses travaux paléontologiques, à la fois dans la troisième édition (et les éditions suivantes) de son *Discours sur les révolutions de la surface du globe* (1825), et dans les légendes des figures illustrant les dents de la forêt de Tilgate dans la dernière édition des *Recherches sur les ossemens fossiles*. Néanmoins, le mot *Iguanodon* n'apparaît jamais dans le texte principal des *Recherches*.

In my paper on Mantell, Cuvier, Buckland and the identification of *Iguanodon* (Buffetaut, 1999), I wrote that, after Mantell published his description of *Iguanodon* in 1825, "Cuvier did not think it necessary to modify the passage about the peculiar teeth from Tilgate Forest in the third edition of *Recherches sur les ossemens fossiles*, published in 1825", and that "as a result, the name *Iguanodon* never appeared in Cuvier's major palaeontological work" (Buffetaut, 1999, p.108). The latter remark is erroneous, as I noticed in the course of further researches on Cuvier's work.

Cuvier did not use the name *Iguanodon* in his rather detailed discussion of the "extraordinary" reptile from Tilgate Forest in the second edition of *Recherches sur les ossemens fossiles* (1824) - which is not surprising since the name had not yet been published by Mantell - nor in any of the subsequent editions, even though the name was by then available. However, he used the name *Iguanodon* as early as 1825 in the third edition of the *Discours sur les révolutions de la surface du globe*. This *Discours* had

first appeared, under the title "Discours préliminaire", as a general introduction to the first edition of *Recherches sur les ossemens fossiles* (1812), and it was later published as a separate volume, which went through many revised editions (see Smith, 1992, for a detailed listing of the various editions). In the 1825 edition of the *Discours*, Cuvier gave an abstract of the various fossil vertebrates known at the time, which included the following remarks about Mantell's finds :

"Les sables ferrugineux placés, en Angleterre, au-dessous de la craie, contiennent en abondance des crocodiles, des tortues, des mégalosaurus, et surtout un reptile qui offrait encore un caractère tout particulier, celui d'user ses dents comme nos mammifères herbivores.

C'est à M. Mantell, de Lewes en Sussex, que l'on doit la découverte de ce dernier animal, ainsi que des autres grands reptiles de ces sables inférieurs à la craie. Il l'a nommé *iguanodon*".

This appears to be the first mention of the name *Iguanodon* by Cuvier, shortly after Mantell had

coined the name. Subsequently, the third (1825) and fourth (1834-1836) editions of the *Recherches sur les ossemens fossiles* incorporated revised versions of the *Discours*, which contained the passage about *Iguanodon* quoted above.

In addition, the name *Iguanodon* appears in the legend of the plates of the fourth edition of *Recherches sur les ossemens fossiles*. The *Iguanodon* teeth are part of plate 249, showing various “sauriens fossiles”. The legend reads :

“ Fig.28, 29 et 30. Dents d’un animal inconnu nommé par M. Mantell *Iguanodon*, recueillies dans le sable ferrugineux de Tilgate, comté de Sussex, en Angleterre, et envoyées par M. Gédéon [sic] Mantell.

Sous le n°28 et sous le n°30, on a représenté les deux faces de ces dents.

La face externe est cannelée.

La face interne est en biseau.

Fig. 31, 32 et 33 ; Dents de la même nature que les précédentes, copiées d’après les dessins publiés par M. Gédéon [sic] Mantell ”.

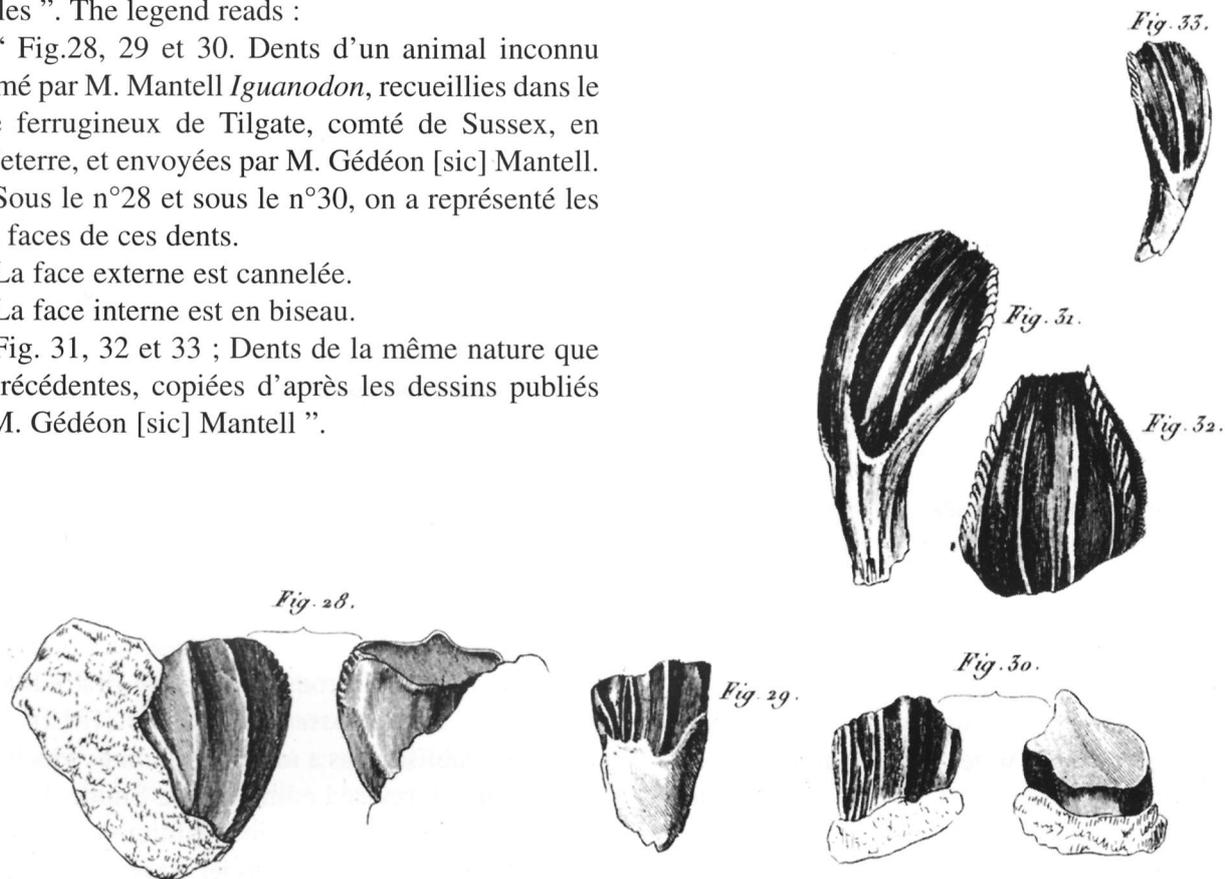


Figure 1 : *Iguanodon* teeth figured by Cuvier in the second edition (1824), and subsequent ones, of *Recherches sur les ossemens fossiles*. Figures 28 to 30 show worn teeth from Tilgate Forest sent by Mantell to Cuvier. Figures 31 to 33 were copied from drawings sent by Mantell, who published them in 1827 as part of plate IV in his *Illustrations of the Ggeology of Sussex*.

Interestingly, plate 249 of the fourth edition of *Recherches* is the same as plate XXI of volume 5, part 2, of the second edition, in which the name *Iguanodon* does not appear, for the simple reason that it had not yet been published, or even coined, by Mantell when Cuvier’s work appeared, in June 1824 (*vide* Smith, 1992). As early as that date, Cuvier had already included drawings of (unnamed) teeth from Tilgate Forest in his plates. Some of them were based

on specimens sent by Mantell to Paris, and the others were copied from drawings made by Mantell for a work that had not yet appeared. Cuvier’s explanation of the figures reads :

“ On voit, pl.XXI, fig. 28, 29 et 30, les figures de quelques-unes des dents que m’a envoyées M. Mantell, et fig. 31, 32 et 33, des copies de trois autres tirées de la planche de l’ouvrage qu’il va publier à ce sujet ”.

However, when Cuvier's copied drawings are compared with the plate in Mantell's 1825 paper in which he first named *Iguanodon*, it becomes obvious that the source for Cuvier's drawings was not that particular plate. In fact, the originals of Cuvier's copies are to be found on plate IV of Mantell's *Illustrations of the Geology of Sussex*, which bears the date 1827 (although, according to Dean, 1998, it was actually published late in 1826). Cuvier's figures 31, 32 and 33 are based, respectively, on Mantell's figures 4, 7 and 8 (on Cuvier's figures 31 and 32, the matrix partly surrounding the teeth on Mantell's figures has been deleted). This implies that as early as 1824, Cuvier had already received from Mantell illustrations that the latter was not to publish until 1827.

Although Mantell was the first to publish a drawing of an *Iguanodon* tooth (on plate XXIX of "Outlines of the Natural History of the Environs of Lewes", published at the beginning of 1824 - see Buffetaut, 1999), the first illustrations of a series of such teeth showing various degrees of wear were actually published by Cuvier somewhat later in 1824, together with a rather detailed description, several months before Mantell's paper on *Iguanodon* was published. As early as 1800, Cuvier had published a pamphlet addressed to the "savans et amateurs des sciences", in which he requested them to send him informations and drawings of any vertebrate fossils they might know of, and in which he made no mystery of the fact that he intended to publish such information in his own works, with due acknowledgment of the assistance of his correspondents (Rudwick, 1997). Obviously, in the 1820s, he still obtained important information in this way, and had no qualms about publishing it before the original discoverer had done so. Mantell apparently had no objection to this, and seems to have been rather proud of the fact that such a leading authority as Cuvier had become so deeply interested in his Tilgate Forest finds.

This episode also shows that Cuvier updated his *Discours sur les révolutions de la surface du globe* more thoroughly than other parts of the *Recherches sur les ossemens fossiles*, since the name *Iguanodon* never appeared in the main text whereas it was inserted in the *Discours* as early as 1825. This is probably linked to the fact that the *Discours* was also published separately, was a much shorter work than the

*Recherches* as a whole, and was of special importance to Cuvier because it was a widely read account of his main principles and results in the field of palaeontology.

#### REFERENCES

- BUFFETAUT, E. 1999. Mantell, Cuvier, Buckland and the identification of *Iguanodon*: a contribution based on unpublished annotations by Mantell. *Oryctos*, 2 : 101-109.
- CUVIER, G. 1812. *Recherches sur les ossemens fossiles de quadrupèdes*. Deterville, Paris.
- 1824. *Recherches sur les ossemens fossiles*. 2<sup>nd</sup> edition, vol. 5, part 2. Dufour & D'Ocagne, Paris & Amsterdam.
- 1825. *Discours sur les révolutions de la surface du globe*. 3<sup>rd</sup> edition. Dufour & D'Ocagne, Paris & Amsterdam.
- 1836. *Recherches sur les ossemens fossiles*. Atlas, t. 2. D'Ocagne, Paris.
- DEAN, D.R. 1998. *Gideon Algernon Mantell. A bibliography with supplementary essays*. Scholars Facsimiles and Reprints, Delmar, New York.
- MANTELL, G.A. 1824. Outlines of the Natural History of the Environs of Lewes. Pp.iii-xxiv. In Horsfield, T.W. (ed), *History and Antiquities of Lewes and its Vicinity*. Baxter, Lewes.
- 1825. Notice on the *Iguanodon*, a newly discovered fossil reptile, from the sandstone of Tilgate Forest, in Sussex. *Philosophical Transactions of the Royal Society of London*, 115 : 179-186.
- 1827. *Illustrations of the Geology of Sussex*. Lupton Relfe, London.
- RUDWICK, M.J.S. 1997. *Georges Cuvier, fossil bones, and geological catastrophes*. University of Chicago Press, Chicago and London.
- SMITH, J.C. 1993. *Georges Cuvier. An annotated bibliography of his published works*. Smithsonian Institution Press, Washington and London.