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This is a somewhat true outline of the course of
arguments which the earlier 19c geologists had to
contend with.

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author.

SCRIPTURAL GEOLOGY.

VOL. I.



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SCRIPTURAL GEOLOGY;

OR,

GEOLOGICAL PHENOMENA

CONSISTENT ONLY

WITH THE LITERAL INTERPRETATION

OF THE

Sacred Scriptures,

UPON THE SUBJECTS OF THE CREATION AND DELUGE;

IN ANSWER

TO AN "ESSAY ON THE THEORY OF THE EARTH," BY M. CUVIER,
PERPETUAL SECRETARY OF THE FRENCH INSTITUTE, &c. &c. AND TO
PROFESSOR BUCKLAND'S THEORY OF THE CAVES, AS DELINEATED
IN HIS "RELIQUIÆ DILUVIANÆ, &c. &c. &c.

VOLUME I.

"Some drill and bore
"The solid earth, and from the strata there
"Extract a Register, by which we learn,
"That He who made it, and revealed its date
"To Moses, was mistaken in its age."—*Cowper:*

"By Faith we understand that the worlds were framed by the Word of God."
Saint Paul.

"In six days the Lord made heaven and earth, the sea, and all that in them is."
Moses.

"Lo, they have rejected the Word of the Lord; and what wisdom is in them?"
Jeremiah the Prophet.

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LONDON, 1826.

THE HISTORY OF THE

ROYAL SOCIETY OF LONDON

FROM 1660 TO 1800

BY JOHN HENRY MAWSON

IN TWO VOLUMES

VOLUME I

1660-1700

LONDON: PUBLISHED BY RICHARD CLAY AND COMPANY, LTD., BUNGAY, SUFFOLK.

DEDICATION.

TO THE BISHOPS AND CLERGY,
TO THE MEMBERS OF OUR UNIVERSITIES,
AND OF OTHER SCIENTIFIC INSTITUTIONS;
AS THE DIVINELY APPOINTED,
OR LAWFULLY CONSTITUTED, PATRONS
AND GUARDIANS OF REVEALED TRUTH, AND
OF LEGITIMATE PHILOSOPHY:
THE FOLLOWING TREATISE, ON "SCRIPTURAL
GEOLOGY," IS HUMBLY SUBMITTED,
AND MOST RESPECTFULLY INSCRIBED, BY
THE AUTHOR.

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P R E F A C E.

IN offering the following work to the public, the writer is not aware that more than one or two points call for notice in the preface. An appeal to the *Sacred Writings* on the subject of Geology is very frequently dismissed, and a prejudice in favour of modern Geological speculations excited, by such general observations as these—That the *Bible* was not given to teach us *Philosophy*, and therefore to press it into such a service may be injurious both to Philosophy and to Revelation—That *Geology* now stands on the same ground which *Astronomy* occupied on the first promulgation of the system of Copernicus—That the expressions of *Moses* are accommodated to the first and familiar notions derived from the sensible appearance of the earth and heavens, and therefore his language must be supposed to express, not the *real*, but *apparent* motions of the heavenly bodies, &c.—I answer

1. The *explanation* given of the expressions of *Moses*, in the last clause of the above objection, is confined to *Astronomy*, and does not at all apply to the *present* subject. Exclusive of the fourth day, no one ever yet supposed that *Moses* accommodated his language generally, on the *Creation* and *Deluge* to the “first and familiar notions derived from the appearance of the earth and heavens;” nor can any supposition of an accommodation of language either to the first and familiar notions derived from the appearance of the constitution of the earth, or to the prior opinions of mankind on the subject of Geology, be drawn in to give us the least relief on this point.

2. With respect to Copernicus and the planetary notions round the sun, He only revived and improved an *ancient* philosophical system, which had been buried in the darkness of Romish ignorance, and hostility to learning and science. *His* seems to have been a heresy against Pontifical Infallibility, and not against the Bible. I cannot learn that *Copernicus* found any difficulty in making his Theory accord with the Word of God. But modern *Geologists* are unable to bring the sacred records into conformity with their "Theory" without taking away from them all legitimate meaning, and destroying their utility.

3. When I profess to appeal to the Scriptures on the subject of Geology, the reader must not suppose that I consider them teaching us any thing on that subject as a Science. But respecting the history of Creation, a point essential to the present discussion, and to primitive formations, even the advocates of modern Geology allow that the Bible gives us a detailed narrative of the whole matter in dispute. And with regard to the formation of the *secondary* strata, the scriptural narrative of the Deluge, I conceive, directly overthrows the system of Geology, and indirectly affords us a key by which to unlock all the difficulties of the most important phenomena of the fossil strata, at which modern Geologists stumble.

As it relates to the *design* of Geologists against revealed religion, I shall say but little. I consider their "*Theory*" alarmingly mischievous, however good their intention. It is the *system* therefore which I oppose, and not the design of its authors, which probably it would not be easy always to ascertain.

4. Respecting the *accommodation* of the language of Scripture, I must say a few words. We have already observed that there is no analogy in the Bible between the present subject and that of Astronomy. I would remark with regard to this point—

That the history of creation has one plain, obvious, and

consistent meaning, throughout all the Word of God.—There is no intimation or key, given in any part of Scripture, that it has any other meaning, though many inspired writers, both in the Old and New Testament, recognize the same history of creation;—There is no part of Revelation from which any other possible meaning can be derived. If then the obvious meaning be not the *true* meaning, the authors of those writings have misled their readers, and the narrative of creation has either no meaning or a false one.—The evils of such a licence, however, are very deplorable. If we once begin to impute to the sacred authors, writings which are either false or foolish, we destroy their inspiration and invalidate their credibility. If in matters of fact and plain historic narrative, they are convicted of ignorance or error, it will leave their testimony upon sacred history and doctrinal truth under the utmost suspicion.

To the objection—That the expressions of Scripture are accommodated to the apparent, and not the real notion of the earth and heavens—I would answer; the case is here widely different. The subject of Astronomy is matter of science. But with respect to the (*real* or *apparent*) nature of that science, the divine authors express no opinion, they give no instruction, nor do they use language (of their own) with the view of conveying on that subject any information. For surely the poetical language used in the nineteenth Psalm, about—the sun going forth as a bridegroom out of his chamber, and making his circuit unto the ends of heaven—can never be fairly made to express any *opinion* of the writer, as to the point before us; that is, whether the light and heat of the sun visiting every place, was *caused* by the motion of the *sun* round the heavenly bodies, or by the motion of the heavenly *bodies* round the sun.—And with regard to those natural *events*, occurring through the motion of the earth and heavens, they use the language which was common in those days; the language which is common now; and

which has always been common. It is therefore, on those subjects, the only proper and intelligible language.

It is plain, then, that the sacred writers not only adopt a proper mode of describing certain natural occurrences, by using the language which every body else uses in the like circumstances, but they were bound in common honesty to use no other. Had they adopted a different phraseology, and one which we might suppose more expressive of the *real cause* of those appearances, they must have done it as *Philosophers*, and not as *Divines*. But they would then have laboured under this inconvenience, they must have made large explanations in order to have been understood. Nor, indeed, could they after all have made themselves intelligible to any but *Philosophers*, or those whom they had made such.—But this would have been to teach the *science* of *Astronomy*, which was quite foreign to the office of the sacred writers.

Had it not been for the respectable quarters from which the following objections come, I should not have noticed them. We are asked, with an emphasis which implies its absurdity,—are we to believe that till within these six thousand years, the Almighty was without a creation?—To which we may answer, it is our feelings, and not our judgment, which force such objections upon us. For if, instead of six thousand years, we were to suppose six millions, or six millions of millions, the objection would still follow us; nor should we be able to get rid of it, without plunging (as a writer has lately done, in a very orthodox and highly respectable publication) into the vortex of the following objection;—That “never was there a period in which the “Creator existed without a creation, though he was prior “to any of his works.”

This objection, if it do not mean to take refuge in an ambiguous and unintelligible phraseology, is quite contrary to the Word of God. *There* we are not indirectly informed, instead of there being no period in which the “King eternal”

existed without a creation, that he existed from everlasting without one. "BEFORE the *world*, even from everlasting to everlasting, thou art God." If there was no *period* or *time* before the creation, there was an *eternity* before it. (Ps. xc. 2; 2 Prov. viii. 23—26.)

This notion, if pursued, would merge in the eternal series of the ancient heathen. Thus, the creation would become as eternal as the Creator; which would involve us in Atheism. To say that "this idea has no tendency to establish the eternity of matter", is not to be understood. For either the Creator existed "*prior*" to the creation in point of *time*, (for we must use the word *time*) or He did not. If he did *not*, however we may suppose the creation to emanate from God, as its author, the creation was certainly co-eternal with the Creator. If he *did* exist "*prior*" in point of time, then there *was* a "*period* in which the Creator existed *without* a creation", agreeably to the plain intimations of the Scriptures above alluded to.

Of the execution of this work, it becomes the writer to say nothing; of that, the candid reader must judge. The author has not courted the applause of the critical, nor sought to satisfy the wishes of the curious. His sole aim has been to elicit truth, and confront error. He has been most scrupulously cautious not to misrepresent, or misunderstand the authors, whose Geological Theory he has ventured to expose. But in a subject so difficult of perspicuous description, and in which Geologists themselves not unfrequently misapprehend one another, he cannot hope that he has always perfectly succeeded. In such cases, he solicits a candid and favourable construction. But as to the modern "*Theory*" of Geology, in all its essential properties, (if it have any real meaning, and be not indeed intended as a burlesque, or as a philosophical plaything, to try how far believers in Revelation can be drawn into the admission of what would sap the foundation of their faith) it is easy of comprehension, and therefore easily answered: For the writer is most decidedly

convinced, that it is not more contradictory to the plain meaning of Scripture, than it is to every known operation of nature, and every dictate of the rational understanding.

The author regrets that his health obliges him, for the present, to postpone the publication of the *second* volume, but he hopes, not later than towards the close of the year. It will comprise a consideration of the philosophy of modern Geology—The Scriptural suggestions relative to the formation of the fossil strata—And professor Buckland's antediluvial Theory of the caves; which subjects, to many readers, may appear more interesting than those already discussed.

SCRIPTURAL GEOLOGY.

BOOK I.

CHAPTER I.

IMPORTANCE OF THE SUBJECT TO BE DISCUSSED.

THE nature of the subject which is to be investigated in the following pages, is very well described by the Reviewer of Mr. Buckland's "Reliquiæ Diluvianæ," in the *Quarterly Review*.

"The more the Strata which comprise the crust of the earth are examined, the stronger evidence do they present of revolutions and catastrophes occurring at wide intervals of time, of slow progressive advancement towards its present state, and of the existence of various orders of created beings which successively occupied its surface before it was finally fitted for the abode of man.—These phenomena, or rather the principles upon which they have been explained in the modern schools of Geology, have been thought to militate against the history of Creation, contained in the first chapter of Genesis."

“ The usual mode of solving the difficulty has been
“ to interpret the six *days* of Creation, not as natural
“ days determined by the revolution of the earth round
“ its axis, but of indeffinite periods: to this explana-
“ tion Mr. Buckland seems disposed in his (inaugural)
“ Lecture to incline.” “ Others object to this with
“ great vehemence, as wholly incompatible with the
“ institution of the Sabbath, which is manifestly set
“ forth as the seventh day, and therefore, they contend
“ that the other six days must be regarded as days
“ of the same kind.” — “ Instead of presuming to de-
“ cide peremptorily in this matter, our object will
“ rather be to caution the friends of religion against a
“ rash and possibly mischievous mode of vindicating
“ their opinions.”^a

Mr. *Sumner* in his “Records of Creation,” as quoted by Professor Buckland in his Inaugural Lecture, writes thus,

“ Any curious information as to the structure of the
“ earth ought not, to be expected by any one ac-
“ quainted with the general character of the Mosaic
“ records. There is nothing in them to gratify the
“ curiosity or repress the researches of mankind, when
“ brought in the progress of cultivation to calculate
“ the motions of the heavenly bodies, or to speculate
“ on the formation of the Globe. The expressions of
“ Moses are evidently accommodated to the first and
“ familiar notions derived from the sensible appearance
“ of the earth and heavens; and the absurdity of sup-
“ posing that the literal interpretation of terms in Scrip-
“ ture ought to interfere with philosophical inquiry,

^a Quarterly Review, September 1823, p. 162.

“ would have been as generally forgotten as renounced,
“ if the oppressors of Galileo had not founded a place
“ in history. The concessions, if it may be so called,
“ of believers in revelation on this point have been
“ amply remunerated by the sublime discoveries as to
“ the prospective wisdom of the Creator, which have
“ been gradually unfolded by the progressive improve-
“ ments in astronomical knowledge. We may trust
“ with the same confidence as to any future results
“ from Geology, if this science should ever find its
“ Newton, and break through the various obstacles
“ peculiar to that study, which have hitherto precluded
“ any general solution of its numerous and opposite
“ phenomena.”

“ All that I am concerned to establish is, the un-
“ reasonableness of supposing that Geological dis-
“ coveries, as far as they have hitherto proceeded, are
“ hostile to the Mosaic account of Creation. No
“ rational naturalist would attempt to describe, either
“ from the brief narrative in Genesis or otherwise, the
“ process by which our system was brought from con-
“ fusion into a regular and habitable state. No rational
“ theologian will direct his hostility against any theory,
“ which acknowledging the agency of the Creator, only
“ attempts to point out the secondary instruments he
“ has employed. It may be safely affirmed, that no
“ Geological theory has yet been proposed, which is not
“ less reconcileable to ascertained facts and conflicting
“ phenomena, than to the Mosaic history.

“ According to that history, we are bound to admit,
“ that only one general destruction or revolution of the
“ globe has taken place since the period of that Crea-

“ tion which Moses records, and of which Adam and
 “ Eve were the first inhabitants. The certainty of one
 “ event of that kind would appear from the discoveries
 “ of Geologers, even if it were not declared by the
 “ sacred historian. *But we are not called upon to deny*
 “ *the possible existence of previous worlds, from the*
 “ *wreck of which our globe was organized, and the ruins*
 “ *of which are now furnishing matter for our curiosity.*
 “ The belief of their existence is indeed consistent with
 “ rational probability, and somewhat confirmed by the
 “ discoveries of astronomy, as to the plurality of
 “ worlds.”^a

Mr. *Faber*, another divine of great acuteness, learning and ingenuity, has given his confidence to the same theory. And he feels quite assured, agreeably to the interpretation of the six days of creation, mentioned in our first quotation from the Quarterly Review, that the “ six *days*” must mean so many *periods* of indefinite, or rather of vast extent. He says,

“ The discoveries, or possibly the rediscoveries of
 “ our ablest physiologists, afford however, so far as I
 “ can judge, positive and direct and palpable demon-
 “ stration, that the six creative days *must* have been
 “ six periods of vast, though to us unknown duration.”^b

The whole of Mr. *Faber*’s remarks have, I believe, been transcribed into the pages of the *Christian Observer*.

The *Rev. Wm. Buckland*, Professor of Geology in the University of Oxford, thus descants on the *nature of Geology* :

^a Buckland’s Inaug. Lecture, 25—27.

^b Rev. G. S. *Faber* on the Dispensations, I. vol. p. 120.

“ Nor can it be considered as a slight recommen-
“ dation to these pursuits, that they necessarily lead us
“ abroad amidst the most sublime scenery of nature,
“ and that they lend even to that scenery an additional
“ source of sublimity in the magnificence of the specu-
“ lations which it associates with it. It is surely grati-
“ fying to behold science, compelling the primeval
“ mountains of the globe to unfold the hidden records
“ of their origin; and it has been well described by
“ one of the most enlightened Philosophers, and the
“ greatest Anatomist of this or any other age, to be a
“ rational object of ambition in the mind of man, ‘ to
“ ‘ whom only a short space of time is allotted upon
“ ‘ earth, to have the glory of restoring the history of
“ ‘ thousands of ages which preceded the existence of
“ ‘ his race, and of thousands of animals that were
“ ‘ never contemporaneous with his species.’ ”^c

The author here quoted by Mr. Buckland, is M. Cuvier, Professor of Natural History, &c. &c. &c. in the *city of Paris*.

With respect to the bearing of modern theories of Geology upon the scriptural records, Mr. Buckland writes as follows :

“ Let us now proceed to the second part of our in-
“ quiry, and examine in what degree the results of
“ geological investigations appear to have affected the
“ evidences of revelation, by bringing to notice facts,
“ which may seem at first sight to be inconsistent with
“ the literal interpretation of the Mosaic records.”

“ Unfortunately for the interests of Philosophy, it

^c Inaug. Lecture, p. 5, 6.

“ has happened that a minute examination of the structure and composition of the earth has given rise to a difficulty from an apparent nonconformity of certain geological phenomena with the literal and popular account of Creation, as it is presented to us in the book of Genesis, and in which the truth of that record seems at first sight to be implicated.”^d

Before we proceed to any further investigation of the *nature* and *evidence* of geological pretensions, I shall make two reflections in reference to the *importance* and *necessity* of such investigation ; which reflections take their rise from the character of the foregoing quotations, and from the information which every week’s report brings to our ears respecting the *fashionable* nature of geological *speculations*, and the facility of mind with which every Tyro sets himself to correct the Bible, by an assumed knowledge of physical phenomena.

1. As to the extent of geological *speculations*, I distinguish between geological *facts* and geological *speculations*. Physical *facts* are a store-house of natural *knowledge* ; but *speculations* and *theories* built upon those *facts* are very different subjects. Yet strange to tell, and most disreputable to the philosophy which produces it, even divines and reading men in almost every situation, are found to speak of the “*numerous revolutions*” which have taken place in the *earth*, as “*facts*” rather than “*theories*” ; as “*phenomena*” which cannot be contradicted, rather than *speculations* which have been grafted upon those phenomena. And who need be surprised at this ? When

^d Inaug. Lecture, p. 22.

he finds *M. Cuvier, Mr. Buckland, &c. &c.* almost every where adopting the same unfair mode of address, in their writings upon the subject. *Mr. Buckland*, in both the short sentences above quoted, speaks of “geological *investigations*” affecting in their results, “the evidences of revelation”. And of “certain geological *phenomena*” presenting “a difficulty” to us “in the book of Genesis”.

Now, to me at least, it is obvious that the “*difficulty*” which *Geology* presents in the face of the “*evidences of revelation*”, does not arise from the “*phenomena*” which it developes, or from the “*discoveries*” it has made, but from the *Theories* which Geological Professors have adopted. Whether however, I am right or wrong in this opinion, it is neither philosophical nor fair to mingle *theory* and *fact* and make *speculation* the same with “*discoveries and phenomena*”, and thus cause the reader to take for granted in the outset, what is the very point in dispute, and the very thing to be proved.

Whatever may have been the proximate cause, it is a truth which cannot be disproved, that since the Translation of *M. Cuvier's* “*Theory of the Earth*” into our language, that “*Theory*” has been very extensively received by persons, many of whom know little or nothing of the foundation on which it is professedly built. *M. Cuvier* and his Colleagues disseminate their “*theory*”, as *fact*, on the Continent. It appears to be so received and so propagated by Professor *Buckland*, at Oxford, and partially at least by Professor *Jameson*, in Scotland, who has translated *M. Cuvier's* *Theory*; by writers on *Geology* in

almost all quarters, and by numerous readers and individuals who speak and write of M. Cuvier's dogmas as if they were *facts* instead of speculations. And when I speak or write to a Friend, about the plain and obvious declarations of *the Bible*, the not unfrequent reply is, 'I see nothing hostile to the Bible in M. Cuvier, there is no disputing against *fact*, and we must be cautious how we place the declarations of Scripture against the "*phenomena of nature*".

2. I think this remarkable facility and amazing readiness to relinquish the plain and literal meaning of divine truth as soon as a specious system calls upon us to do so, are both contagious and alarming.

Mr. Sumner, in the passages above (3.) quoted, views it as an "absurdity" to suppose that "the literal interpretation of terms in scripture, ought to interfere with philosophical inquiry," or to forbid us "to *speculate* on the formation of the globe", or to deny that there was a "wreck" of "previous worlds" from which our own was "*organized*".—"Organized", not created.—Or if *created*, it must not be spoken of as *The Creation*, as every christian has hitherto been accustomed to speak, but of "*That creation which Moses records*"; leaving it perfectly at large how many *previous* Creations there might have been.

The learned Reviewer too of Mr. Buckland's book noticed in the first page, warns the "friends of religion against rashness in defending their opinions, but says not one word of the possible *danger to religion* from the *speculations of Geologists*, while he goes on still to concede in their favour.

“Well is it indeed for us that the cause of revelation does not depend upon questions such as these:—“Truth, it is certain cannot be opposed to truth. “How inconsiderate a risk do those run who declare “that the whole cause is at issue in a single dispute, “and that the substance of our faith hangs upon a “thread—upon the literal interpretation of some “word or phrase against which fresh arguments are “springing up every day.”^e

It ought however to be admitted that what *God says*, in matters of plain *historic fact* can have but one meaning and that the “*literal meaning*”. It becomes therefore a contest not with *man* but with *God*. If *He* moreover be convicted in a “*single contest*,” the *cause is lost*. For it is essential to the very existence of Scriptural truth that Jehovah must in every instance “*be justified in his saying and clear when he is judged*.”

It is quite manifest from the above quotation that the learned reviewer considers the *Theories* of modern Geologists to be founded in “truth,” when he says “*Truth cannot be opposed to truth*.” It is equally clear that he considers the Mosaic narrative of Creation, in its “literal interpretation” as incapable of being supported; and that those who adhere to the “literal interpretation” of that narrative, run an “inconsiderate risk”. It is further clear that this System of Geology has greatly warped his mind; and Mr. Sumner, and Mr. Buckland, and Mr. Faber evidently coincide with him, relative to the integrity

^e Quarterly Review, p. 113.

and decisiveness of divine truth in what he subsequently advances respecting its claim to our regard in these matters. He proceeds:—

“That in an inquiry into the history of the world “to reject the evidence of written records as wholly “irrelevant and undeserving of attention, is in itself, “*illogical* and *unphilosophical*. It is true that to assume these records to be infallible and above all “criticism is to prejudge the question and to supersede “all inquiry: but when the case is one of remote “concern and full of difficulty, when we are compelled “to compass sea and land for presumptive and circumstantial evidence, to turn a deaf ear to that “Volume which professes to give a direct and detailed “account of the whole transaction” is a great “violation of the laws of sound reasoning.” †

Mr. Sumner too in the passage we have cited in pages two to four, speaks of the innoxious tendency of any “theory which acknowledges the *agency* of the Creator.” I believe however that *M. Cuvier* never makes that acknowledgment throughout the whole of his Book on the “Theory of the Earth;” and I am not sure, that the *Theory itself* will even admit or allow of such an acknowledgement.

The above passages shew us the deleterious effects of “*physical Geology*” upon the principles of *christian divines*. Was ever the “*word of God*” laid so deplorably prostrate at the feet of an infant and precocious science! We learn here, and rightly learn that the sacred “*volume—professes to give a direct*

† Quarterly Review, 142, 143.

and detailed narrative of the whole transaction;” viz. how the world was formed, and of those matters which engage the attention and divide the opinions of Geologists.—To persons who, like many of the continental philosophers, pay no more respect to the inspiration of *Moses* than to that of *Confucius*, we ought not to look for respect and submission to a “Volume” which they do not believe. But towards professed receivers of the divine record the subject bears a different aspect. Perhaps the learned author does not exactly mean all that his words seem to imply; otherwise the question might soon be brought to issue. For his language seems to imply that the question now to be solved between *geology* and *divinity* is, whether the *Sacred Volume* which contains the “*detailed narrative of the whole transaction*” be fallible or infallible, true or false.

Yes, *true or false*. For if it be true, what it declares must be *correct*, and no appeal can be allowed from the statements made in that divine and “detailed narrative of the whole transaction.” The reviewer’s language certainly implies that if “*these records be infallible*,” they meet, fairly and fully meet “*the question,—and supersede all inquiry*” relative to *theories, speculations*, and “*worlds*” existing before our own. Is the only question, now to be, whether *these records are infallible or not?* If they be infallible the matter it seems is at an end, and further inquiry superseded. How portentous then is the aspect which geological speculations present. They dare to dispute the matter with the most High! They assume to be wiser than God! Geology finds evidence in

the bowels of the earth that “*Moses* the man of God” was either deceived or a deceiver; or at least has written incorrectly and unintelligibly!—If “*to assume these records to be infallible and above all criticism, is to prejudge the question,*” then the “*question*” is about their *infallibility* and not about their *meaning*. And this in my mind, is beyond a doubt the genuine result of *theoretical Geology*. *Its tendency* is to arraign the Scriptures and sap the *divine record* of our faith; though it is unquestionable, this learned and very highly respectable author is far from any such design.

“*Criticism,*” legitimate criticism, and no other can be allowed, is confined to the province of inquiring into *fact*; whether what passes under *his name*, be indeed what it professes to be; namely; *The writing of “Moses the man of God?”*—Criticism may inquire whether any alterations or corruptions have taken place in the Sacred Text; or whether various readings or versions prove to us, that our present *translation* be incorrect, or its *meaning* obscure. But to criticise the *narrative as such*, (as Geology unquestionably does,) as if the *Author* might be *mistaken*, and were amenable to human correction, is completely to abandon the *divinity* of the *history* altogether.—This is truly an alarming consideration. If it thus appear that among the first rate divines of our Universities, Geology possess influence enough to make them contend that “fresh arguments are springing up every day against the literal interpretation” of “that volume which professes to give a direct and detailed narrative of the whole transaction,” it is

surely more than time for persons who are jealous for the AUTHOR of this *narrative* to inquire into the pretensions of Geology.—The following remarks of Bishop Horsley I consider to be very important and very appropriate.

“I confess it appears to me no very probable supposition, (and it is I conceive a mere supposition not yet confirmed by any clear instance,) that an inspired writer should be permitted in his religious discourses to affirm a false proposition in *any* subject, or in *any* history to misrepresent a fact; so that I could not easily nor without the conviction of the most cogent proof, embrace any notion in philosophy, or attend to any historical relation, which should be evidently and in itself repugnant to an explicit assertion of any of the sacred writers, &c. (Horsley’s Sermon 39 on Ezek. xii. 7, quoted in Mr. Biddulph’s Religion of the Patriarchs, vol. 1, page 8.)

To how *many* explicit assertions, not of *one* sacred writer, but of *many sacred writers*, the *Theories of modern Geology* are plainly *repugnant*, we must leave for further inquiry. I may however be permitted here to assure the reader, that divine assertions so contravened, will be found neither ambiguous nor few.

But has Geology indeed a claim to so much deference, from believers in the infallibility of their “*Bible?*” Are Divines of the *Church of England*, Professors of *Geology*, and Professors of *Divinity*, obliged to admit that *their Scriptures* are not “*infallible?*” Must they be compelled to surrender all claim to shelter themselves under the wings of that philosophic maxim, that

“Things once proved should henceforth be received *as true.*” Are divines of the *nineteenth century* obliged to submit to the reproach that they have received into the records of their faith, a *professed narrative of creation*, concerning which they have no certainty whether it be *truth* or a *fable!* And shall they stand ready, at the first demand of an infant Geology, to deliver up a narrative which has stood the test of many thousand years!!—Surely there is no limit to the mischiefs thus arising to the Oracles of God, and to the hope of salvation from the inventions of men!

CHAPTER II.

THE NATURE OF THE GEOLOGICAL SYSTEM, AND ITS BEARING UPON THE CREATION.

THE character of the Geological System, which will form the subject of the present chapter, must be sought out in its simplest form, unconnected as much as possible, with the *evidence* and *argument* by which the *theory* is established. My design in this, will be to enable the reader to *see* the *theory* itself. In order that he may do this, that theory must be made to *shew* itself, and to *stand out* from the innumerable multitude of accompaniments by which it is clouded or concealed. If the System in its essential character can be distinctly brought to view, we shall be able to judge of its pretensions in *comparison of the Scriptures*—we shall see *how far it is consistent* or inconsistent with the *divine record*—and *how much of the Bible* we must relinquish by the adoption of *this theory*.

Unless something of this simple and detailed comparison be faithfully and fearlessly made, we shall be unable to do justice either to the *Scriptures* or *Geology*. If Geology be able to *stand this test*, it

will gain strength to make progress. If not, the *Biblical* reader will find adequate ground for *rejecting* it without further inquiry into its pretensions. For he, knowing his Bible to be true, will, feel no hesitation or reluctance in pronouncing that whatever is *contrary to that Bible must be false*, under whatever specious appearance or disguise it may appear.

I deem it right to pursue this plan, on two grounds.

1. Because I perceive that many persons lend their ear to this Siren merely because she has beguiled them into an admission that her dogmas are not at all injurious to the articles of their faith. And Geologists professing *Christianity* take great pains to persuade us that their theories are reconcilable with the Bible records.

2. Because if we find *Geology* consistent with the Scriptures, we *need go* no further in our inquiry, so far as our *faith* is concerned. While, on the other hand, if we find it *inconsistent* with the *sacred record*, we satisfy at once, the great body of the christian world, agreeably to the decision of Bishop Horsley before quoted, that its pretensions are false. We gain moreover, a powerful claim on *every one* who thinks God's word of importance, in the matter, to examine, or re-examine, the *claims of Geology*.

We do not mean however to shrink from a more direct and strict inquiry into the evidences of Geological Theories. But this must be left for subsequent discussion.

Several of the preceding writers whom we have quoted, indirectly invite our approach towards Geology by telling us that such Authors as M. Cuvier,

who is indeed the reviver, and professes to be the original author of the modern "theory," have shewn no bad intentions towards Revelation. But this is a most mischievous and unfair way of doing the thing. It lays us under the necessity of either proving the infidel-design of these authors, or else of believing that there is no harm in adopting the system. It supposes that the vice of a system takes its malignity from the vice of its author; and that bad principles propagated, with no bad design, will be harmless.

Whatever suspicion, therefore, I may have of the hostile views of continental Geologists towards the Bible, it is a point which I am not bound to prove or take for granted. It is enough for me if their *theories* be of a hostile character, and bear a pernicious aspect towards the word of God.

Mr. Buckland, in the following note, shows us his view of the nature of *revolutionary Theories*, and of their tendency to make believers and converts to Moses. This effect we must by and by examine. The present chapter must be occupied by an inquiry into the NATURE of *geological speculations*; or into the true character of that "*Theory of the earth*" which is the subject of the present discussion. — Mr. Buckland writes,—

"The opinion expressed by Linnæus, that he could discover in the earth's structure no proofs whatever of a Deluge amidst abundant evidences of very high antiquity, was obvious to be adopted by an accurate observer, at a time when it was attempted to explain all the phenomena of stratification and organic remains, by reference to this single catastrophe; the

“infant state of Geology at that time rendered it
 “almost impossible to distinguish the phenomena
 “which are strictly of diluvial origin from those
 “which must be referred to other and more ancient
 “causes: but the advances which have since been
 “made in this science have established a numerous
 “and widely varying series of facts, a certain class of
 “which bears as unequivocal evidence to the exist-
 “tence of a Deluge at no very distant period, as the
 “phenomena of stratification afford on the other hand
 “of more ancient revolutions affecting our planet
 “during the time in which its strata were being de-
 “posited; and it has been from want of accuracy in
 “distinguishing between these two distinct classes of
 “facts that the errors have arisen, such as those into
 “which Linnæus fell.”^ε

Mr. Buckland refers to his “Inaugural Lecture”
 “for an explanation of the manner in which these
 natural appearances may be reconciled with the
 Mosaic account of Creation.” This will of course
 come under due consideration.

It is no way unusual, however unfair, for geolo-
 gical writers to endeavour to gain advocates to
 their cause from among persons who regard their
 Bible, by representing the notion, that the fossil
 Strata were occasioned by the deluge, as so completely
 absurd, and so obviously fallacious, that its adoption
 by christian writers has driven observing and discern-
 ing persons into a disbelief of the *deluge altogether*.
 Thus an author in the article “Organic Remains” in

^ε Reliq. Dil. p. 225.

the Edinburgh Encyclopedia, writes respecting this point. It is, he says, "a notion much insisted on even "in later times, (than that of Tertullian) by those who "ought to have been better informed. We will not "dwell on this subject, but may remark that it was this "argument probably, which induced Voltaire to deny "the fact (of the deluge) altogether." (p. 684)

These writers ought to know that believers in divine record are not by such insinuations as the above, to be deterred from asserting its claim to perfect confidence on this head, as well as on every other point in which it professes to instruct mankind. The above declaration however may be true. *Voltaire's* hatred of revelation was strong enough to make him spurn at every historical or physical *fact* which in his view had a tendency to prove Revelation to be true. And much more at a fact which, when rightly viewed, proves as I conceive, both its *accuracy* and its *veracity*. And we cannot give much credit to modern writers, for religion and discernment, who desert the *Mosaic* account of this matter, to follow "cunningly devised fables."

I shall now quote from Mr. Buckland's Inaugural Lecture a summary of the "theory" which he conceives *M. Cuvier* to have established, leaving the proof or evidence for the present, as he gives it.

"We find the primitive rocks on the greater part of "the earths surface, (i. e. rocks which contain no re- "mains of animal or vegetable life, or fragments of "other rocks,) covered by an accumulation of deriva- "tive or secondary strata, the greatest perpendicular

“ thickness of which cannot be estimated at less than
“ two miles.”

“ These strata do not appear to have been deposited
“ hastily and suddenly ; on the contrary, the pheno-
“ mena attendant on them are such as prove that their
“ formation was slow and gradual, going on during
“ successive periods of tranquillity and great distur-
“ bance ; and being in some cases entirely produced
“ from the destruction of more ancient rocks, which
“ had been consolidated, and again broken up by
“ violent convulsions antecedent to the deposition of
“ those more modern or secondary strata which are
“ sometimes in great measure derivative from their
“ exuviæ.”

“ The difference also of organic remains both of
“ animals and vegetables, contained in the different
“ strata successively deposited on each other, and again
“ their non-agreement with now existing species, seem
“ to indicate that great changes have taken place in
“ animated nature, and that new races of organized
“ beings have successively arisen and become extinct
“ during the periods at which these strata were formed ;
“ and thus to point out a series of revolutions, to the
“ last of which the present state of the earth and its
“ inhabitants belong.”^h

Without stopping here again to notice the mixture of theory and facts, I wish to draw the readers attention to the simple character of this “ theory” which is contained in the concluding words of the above quotation ; namely

^h Inaug. Lect. 29, 30.

“A SERIES of *revolutions*, to the LAST of which the PRESENT STATE of the EARTH and its INHABITANTS belong.”

Here we see, that the “*last*” revolution has brought the “earth” to its “*present state*.”

That last revolution was *Noah's flood*, which is now every where admitted on all hands.

The *preceding* revolutions had been numerous, and vastly more violent and disruptive to the earth's surface than the later ones.

The THEORY is this.

I. *All the Strata* of the Earth, even the *primitive rocks*, have been “quietly deposited in a fluid” viz. the sea.

II. The *proof* of this, is the “*fossil remains*.”

1. In the *lower* and (therefore called) *older Strata*, “are fossil remains” of *animals* VERY LITTLE like the PRESENT RACES.

2. As we rise *higher*, the *newer strata* contain “fossil remains” *more nearly* approaching the *present* existing races of animals.

3. The *upper stratum*, effected by the *last* revolution, contains “fossil remains” almost *exactly like* the *present races*.

III. Every revolution, therefore, is *distinguished* by its *appropriate and peculiar fossil remains*.

IV. What makes these matters so peculiarly demonstrable, in the view of modern Geologists is, not merely a general and more intimate acquaintance with their science, but the peculiar, and almost miraculous talent of M. Cuvier.

1. “He knows nearly all the animals in the world.”

2. "He can distinguish their species by half a bone."

Though the *number* of revolutions is not exactly specified in any Geological writings which I have read, some notion may possibly be formed from the Plate prefixed to M. Cuvier's "theory of the earth," in which he professes to give the Strata and their "organic remains," from the *primitive rocks* upwards to the surface of the earth.

I. Primitive Rocks (four in number) no fossil remains.

II. Transition rocks (nine) *first appearance of fossil shells and corals.*

III. First old red sand stone and old conglomerate—*fossil wood.*

IV. First limestone or mountain limestone—*fossil corals and shells.*

V. Coal formation—*Impressions of plants,* many with a Tropical aspect.

VI. New red conglomerate.

VII. Second limestone or magnesian limestone—*first appearance of fossil fishes and fossil oviporous quadrupeds.*

VIII. Second sand-stone or new red sand-stone—*fossil shells, corals and vegetables.*

IX. Third limestone or jura oolite and lias limestone—*fossil shells, corals, lacertæ, fishes and vegetables.*

X. Third sand-stone or green sand.

XI. Fourth limestone and chalk—*fossil shells, corals, lacertæ, turtles, and fishes.*

XII. Brown coal formation.

XIII. Hertfordshire pudding-stone.

XIV. Paris formation—*first appearance of fossil remains of birds, and mammiferous animals.*

XV. *Remains of extinct species of elephant, rhinoceros, hippopotamus, taper, deer, hyæna, bear.*

XVI. *Fossil remains of the human species first appear in this formation.*

I have taken M. Cuvier's scale of the Strata both for the purpose of avoiding any complexity upon the subject, and because M. Cuvier is generally received as the standard authority respecting formations and fossil remains, the "history of which (Mr. Buckland informs us) was never fully understood till the recent investigations of M. Cuvier."^j The same author gives us the following commendation of M. Cuvier's work upon this subject, He declares it to be "a work containing "more sound and philosophical reasoning on the early "state of our planet and a more valuable collection of "authentic facts relating to the history of its fossil animals of the higher orders, than can be found in all "other books that have yet been written upon the "subject."^k

In the above table we find *sixteen* Strata, and *eleven* of these Strata containing "fossil remains." By beginning at the *surface* of the earth, and tracing the Strata downwards, we shall be able to come to the point at which we are now aiming. Whether we are to count the *number of Revolutions* by the number of the *Strata*, or by the number of Strata containing "*organic remains*," we are not distinctly informed. To give, however their system all its advantage, we will suppose for

^j Reliquiæ Diluvianæ, p. 172.

^k Ibid. p. 162.

the present that the Strata containing organic remains, are to be regarded as furnishing our rule. We shall then find the revolutions to be "Eleven." And suppose we further grant, as Mr. Buckland appears to think it should be granted, that the two last Strata, namely the fifteenth and sixteenth, mentioned as the two uppermost in M. Cuvier's table, to be only one, we shall then find TEN REVOLUTIONS from the *surface* of the earth to the primitive rocks. But the exact number of revolutions is perfectly immaterial to my present purpose. It may perhaps be worth while hereafter to consider it more minutely.

In order to discover the agreement or disagreement of this system with the Scriptures, we must examine it in those parts or portions or stages of its progress, where it comes in contact with the Scriptural account of these matters. According to Geologists, at least to those of them who believe the Bible, it is admitted that "*as far as it goes*, the Mosaic account is in perfect "harmony with the discoveries of modern science." The only profession of these theorists is, that "Geology goes further, and shews that the present system "of this planet is built on the wreck and ruins of one "more ancient."¹

The last or upper stratum Mr. Buckland calls "*Diluvial*," because he considers it to have been especially confined to the action of the Deluge. This stratum is the upper one of M. Cuvier, which he calls "*Alluvial*." He however distinguishes it into two, or even three, periods, and so in part does Mr. Buck-

¹ Buck. Inaug. Lect. p. 24.

land. The *lower* portion is considered as containing animal remains, drowned by the Deluge; the *upper* part, which is near the surface, as containing bones of men and animals who are dying daily. For the present we shall consider this “Diluvium,” in order to keep the matter in its simplest shape, as *one* “*formation*,”^m—the *upper* part containing *existing* species, the *lower* part *diluvial* remains. By going back then from the present time, and from the SURFACE of the earth downwards, we shall come to what the Scriptures have described in the stages of geological progression.

The reader will remember it is of the essence of this theory, that each stratum or stage is distinguished by its peculiar and appropriate petrifications.

I. The PRESENT species; at top of the diluvial formation.

II. The *extinct* SPECIES; the Elephant, Rhinoceros, Hippopotamus, Mastodon, Elk, &c. at bottom.

III. The *extinct* GENERA; the Palæotheria, in the “Paris formation,” which is the *next* stratum immediately under the diluvial formation. This “Paris formation” is a very remarkable one, and, according to this theory, is the last revolution *but one*. The last was our deluge. Our deluge involved the “*extinct species*.” That previous one, the “Paris formation,” imbedded the “*extinct genera*,” which M. Cuvier

^m The reader must here be informed that I take the subject in its genuine and simple form, as the “*Theory*” requires it should be taken; and indeed it is the most favourable light in which it can be received. For were we to force it into its *extreme* bearings, we should not only arrive at more difficulty from complexity, but at *more revolutions*, which would here be injurious to their Geology. If inconsistency should hereafter appear, it will not be my fault.

calls the "Palæotheria," or large ancient unknown animals.

The "PARIS FORMATION" we must now examine.

This formation lies immediately beneath the *last* or "Diluvial formation," which consists of sand, loam, clay, and gravel. The depth of this diluvial formation varies exceedingly. In some places it does not so much as cover the rocks. In other places it is two or three hundred yards in depth.^a

The "Paris formation," however, is much more regular, though its depth is not distinctly stated. It lies in the middle of the Paris stone quarries; and the stone on which the city of Paris is built, is situated in the stratum *beneath* the gypsum, or Paris formation. The upper of three layers, of which the Paris formation consists, is stated to be sixty feet deep.^o But as this layer is "by far the greatest," I should not estimate the other two layers at more than thirty feet. This would make the Paris formation to be, upon an average, ninety feet, or *thirty yards*.

These thirty yards, more or less, are the sum total of that portion of the secondary strata which was formed by the last revolution but one. Each revolution deposited its own peculiar formation, which formation is distinguished by its own peculiar fossil remains. The "Paris formation" is distinguished by the "Palæotheria;" The "Diluvial formation" by its "extinct species." These "Palæotheria" are called the "extinct genera," and are no where found, I understand, but in this "Paris formation."—I repeat it, this

^a Phillips's Geology, p. 14. ^o Cuvier, p. 412.

“Paris formation” was the genuine, appropriate, and sole operation, and the whole of what was formed by the operation of the *last revolution but one*. It has a character of stratum its peculiarly own; and it contains animal remains of the like to which M. Cuvier assures us there are none to be found, either now existing on earth, or in any stratum later than the “Paris formation.”^p

But we have now brought the matter to a crisis. The *Bible* reader may now grapple with *Geology*. He may judge for himself of its pretensions. These *thirty yards* of stratum were the entire amount of what was effected, produced, or formed by the last revolution but one. The reader, however, must now be informed, that this said “Paris formation,” this last revolution but one, and its operations, appropriately designate **OUR CREATION!**

Our Creation! Yes, **OUR CREATION, OR**, in Mr. Sumner’s words, *THAT Creation* “which Moses records.” This, scriptural and courteous reader, is the sum total that Geology would make of the **BIBLE CREATION!!!**

^p Cuvier’s Theory, 109, compared with 361, 2. By referring to page 109 the reader will see that M. Cuvier says, “*all the genera which are now unknown, as the palæotheria, are placed directly over the coarse limestone “Strata.”* He will see too, by referring back to the plate which we have lately copied, that the “*Paris formation,*” which is the formation here meant as lying “over the coarse limestone,” does not lie “*directly*” over, or upon, the “coarse limestone:” but is intercepted by two intermediate formations,—namely the 12th and 13th, called the “brown coal formation, and the Hertfordshire pudding-stone.” The “coarse limestone” is the 11th, and the “Paris formation” is the 14th stratum. More inaccuracies of this sort, and many infinitely worse, may by and by be disclosed. But I wish here to steer as clear as possible of confusion, and to give the case as Cuvier has given it in the development of his Theory, leaving out for the present all discrepancies.

That the reader, and indeed every thinking mind must stand confounded at perceiving this result of our investigation I cannot but believe. But his astonishment will probably increase when he accompanies our researches a little further. To what, he may probably ask, is our CREATION reduced. We may perhaps be able to illustrate this very extraordinary discovery by the following inquiry.

Suppose the Earth's *diameter* to be eight thousand miles.

Its *solid contents* will be about two hundred and sixty thousand millions of solid miles.

This *thirty yards* stratum or shell, will be less than four millions of solid miles.

And, being not the fiftieth part of a mile thick, it will be less than a *four hundred thousandth* part of the earth's diameter.

And not a *sixty-fifth thousandth* part of its solid contents!

But were we to allow that this formation was double, treble, or twice treble, it would not even then comprize a *ten thousandth* part of the 'solid contents of the Earth we now inhabit!

This I admit, it is impossible, under any figure of speech, eastern or western, ancient or modern, to call THE CREATION. It is not unquestionably, either a "*creating*" or a "*making*" of the Earth.

I was going to say that the *plaistering* of the walls might as well be called a building of the house, for the incoming tenant, as this stratum be called a "*making the Earth*" for the use of man; this however, would be vastly too liberal an admission: for on calculation,

I FIND THAT A WHITEWASH OR COAT OF PAINT ONE HUNDRED AND EIGHTIETH PART OF THE THICKNESS OF A SHILLING, OR THE TENTH PART OF THE THICKNESS OF A SHEET OF BATH LETTER PAPER, BEARS VERY EXACTLY THE SAME PROPORTION TO A TWENTY INCH WALL, AS THE THIRTY YARDS DEPOSIT BEARS TO THE EARTH'S SUBSTANCE!!!

This being the genuine effect of M. Cuvier's, Mr. Buckland's and the modern Geological world's theory, I need not say much in proof of its contrariety to Scripture, and that it is perfectly subversive of the BIBLE CREATION, which declares that "in six days God made the heavens and the earth, the sea and all that in them is."

If a landlord was to turn out his present tenants and whitewash the walls for its "future inhabitants," and should say he had 'BUILDED THE HOUSE FOR THEIR ACCOMMODATION,' and should ever after, in all his intercourse with them, use the same language and never allude to the *prior* existence of the house, its *numerous transformations*, or its former inhabitants, he would do by his tenants exactly what the results of this theory make the Almighty—"the only living and true God"—to have done towards man!!!^a

If to this we add the consideration that the "Paris formation," which we have hitherto supposed to sur-

^a As I am here placing the *system of Geology* in contrast with the *Scriptures*, I must for the present be allowed to *assume* that the plain and literal meaning of the Scriptures upon the subject of creation, is the *true* meaning; and that *no other* meaning, as it respects *the creation*, is used throughout the Bible. We shall soon come to the full discussion of all these subjects.

round equally, the whole globe, is found only or chiefly to extend a few scores of leagues around Paris, we shall at once perceive that were a man to plaister a cottage on Blackheath and roundly and constantly assert that by that act he had really built the city and suburbs of London, he would not act so absurdly preposterous, as if, by making the Paris formation in the Paris Basin, he should say that thereby there were made—"the heavens and the earth, the sea and all that in them is"!!!

CHAPTER III.

EVASIONS OF THE PRECEDING CHAPTER CONSIDERED.

DOUBTLESS no person of good understanding who does not wish to degrade the divine record, would even think of applying or accommodating the *scriptural* language of "creating and making" the "earth," much less the "heavens," to the operation which was confined simply to the making the "Paris formation." He will therefore try to invent some way of evading the force of its application to the geological theory. There are I think but *two ways* by which we can suppose the preceding observations to be even attempted to be evaded. And these are, that either *more* than the "Paris formation" was deposited at that revolution which answers to our *creation*,—or else that the revolution which deposited the "Paris formation" is *not* the revolution which corresponds with our Creation.

To all this I may reply that, if *more* than the Paris formation were deposited at the revolution which caused that formation, M. Cuvier's system will be destroyed by the admission: and if *that last* revolution but one, which formed the Paris stratum, do not designate the

operations of our Creation, no other revolution can possibly designate it without subverting the theory altogether.—Let us now briefly examine these points.

When *more* is supposed to be done at our creation than merely the “Paris formation,” *enough* more must be allowed, to have been performed to satisfy the *geological* notion of the *scriptural* creation. What this geological notion is I cannot tell from the direct statements of geologists. But *indirectly* I have taken possession of the preceding position, and this position I mean to maintain. *Here*, however, I wish only to *state the nature* of the geological theory, and thus to open a way for comparing it with *the Scriptures*. Its *evidence*, its *character*, its *physical truth* or falsehood, I have before said, must be left for another part of this Treatise. *There* I intend to inquire into all the necessary branches of the theory, its consistency or inconsistency with *itself*, with *Mr. Buckland’s* discoveries and opinions upon those discoveries; and with *physical truth*.

I never yet met with any person who either in writing or conversation seems to have at all made up his mind, as to what *precise form or state* the earth must of necessity have been found in or left in *at our creation*, according to the *geological theory*. They admit, however, that the theory has many revolutions and these revolutions have their respective formations, between the primitive rocks and the earths surface. That is, many Revolutions and formations from the primitive formations to the present time. And from the disappearance of one class of animals from these formations, and the reappearance of another class of

animals in these successive formations, up to the present time, they cannot but admit that our creation and our deluge fall into this series of revolutions, and form the two last of them: tho' it is true that every thing appears in perfect confusion and mystery when they attempt to develope their ideas upon the subject. This, however, makes it so much the more necessary that the matter should, if possible, be brought to light.

M. Cuvier, I conceive, acknowledges nothing of a "*creation.*" But *christian* writers, such as Mr. Sumner, Professor Buckland, the Quarterly Reviewers, &c. must admit many creations. Mr. Sumner, we have already observed as quoted by Mr. Buckland in his Inaugural Lecture,^r calls it "THAT *Creation which Moses records.*" And Mr. *Buckland* we have also seen in the earlier part of this Treatise,^s when giving an abstract of Geology from M. Cuvier's "Theory of the Earth," tells us that the phenomena of that Theory "*point out a series of revolutions to the last of which the present state of the earth and its inhabitants belong.*" This "*last revolution*" is on all hands admitted to have been effected by *our deluge*. And the *Scriptures*, as all allow, will not permit us to assert any other general revolution since our *creation*. Our *creation* then, as is certain from the Bible, is only the *second* grand and universal event which has happened to our globe, reckoning backwards from the *present time*. Mr. Buckland, in alluding to *that event*, considers that "*Moses confines* the detail of his history to the "*preparation* of this globe for the reception of the "*human race.*"^t But he argues for *living beings* long

^r p. 26.^s p. 20.^t Lect. 24.

before *our creation*; and tells us that Moses “does not deny the *prior existence of another system of things.*”

That Mr. Buckland would probably contend that *more* was done *to the earth* “for the reception of the human race” than is included in the “*Paris formation,*” I readily believe. But it is certain that *this theory* will not *admit* of more without involving its own destruction. For the *very essence*, the very existence and life of M. Cuvier’s Theory is, that the “*fossil remains*” designate the strata and the revolutions; and that the “*Palæotheria*” designate the “*Paris formation,*” and peculiarly appropriate it to themselves. And this “*Paris formation*” he places *next under* the Diluvial soils, which Diluvial Mr. Buckland, as well as every one else, considers as the *last revolution*, which is *our deluge*.

If now it be contended that *more strata* than the “Paris formation” were effected at this said second revolution from our times, I would ask, *how many more* strata were then formed? and upon what *evidence* do such formations rest? Would the addition of the two *narrow slips* lying next under the “Paris formation,” (called the Hertfordshire pudding-stone and brown coal formation) satisfy the geological character of our *creation*? But *this* altogether is not *half* so big and so thick as the “Paris formation,” and would therefore make no visible addition to the previous *white-wash* of that event,—*our creation!* Shall we include in *that event*, the “*limestone and chalk*” which is the *next fossil stratum* beneath the “Paris formation,” and allow or rather contend that they were *both* effected

at the creation of man? This, however, would mingle together the “*limestone*” which is held to be an *ancient* deposit, with the “*Paris formation,*” which is esteemed a comparatively *modern formation*. It would moreover utterly destroy M. Cuvier’s pretensions to distinguish the *successive epochs* from their “*fossil remains,*” by making *cotemporaneous* the “*Palæotheria*” with the “*limestone shells,*” which it is absolute death to his *Theory* for one moment to confound! —If we include the *Diluvial stratum,* or that immediately *above* the “*Paris formation,*” as formed together with it, and *both* at *our creation,* we fall into precisely the same mischief, by mixing the “*Palæotheria,*” or “*extinct genera,*” with the vastly *more modern* “*extinct SPECIES.*” But *this Theory* cannot stand an instant under this admission of “*extinct GENERA*” and “*extinct SPECIES*” being mixed and joined *together*; for the whole system is *literally* built upon the *distinction*. M. Cuvier says, They “*are never found*” along with each other.†

So that we cannot possibly admit *one* fossil stratum either *above,* or *below* this said “*Paris Formation*” without destruction to the very pretence upon which the theory itself is professedly built, and to the very evidence on which it was constructed.

The second *evasion,* namely that the “*Paris formation*” does not denote the *revolution* which designates our creation, is answered in the *first*. For if, that, which is the first under the “*Diluvial*” deposit, do not denote the same catastrophe and the same event with *our creation,* no *other* formation in the

† Cuvier’s *Theory,* p. 110.

series can possibly pretend to do so. And if it could, it would still be attended with the *same result*. For *every* stratum is similarly circumstanced, and is contiguous to other strata above or below itself, with the "*fossil remains*" of which we are absolutely forbidden, by *this theory*, to mix those of the adjoining strata. So that turn which way we will there is no possibility of escaping the destruction of this extraordinary theory.

It is inevitable, then, that *one* of these Formations and *one only* shews the sum total of that revolution, or event which this theory ascribes to "*that* creation which Moses records," and which consisted in "*the preparation* of this globe for the reception of the human race."

If, however, we were to admit, for the sake of allowing our Theorists another argument, that *more* strata than the "Paris formation" were produced by our creation, we shall ruin this theory in another direction. For having once broken the magic spell by which we are obliged to *confine* each stratum and each one's appropriate "*fossil remains*" to itself alone, we have nothing to forbid our contending that if *more than one stratum* can consist with *one revolution*, more than *two* may do the same. And the result will be that *all* the strata may have been the effect of *one* revolution; and *that one revolution*, not the *creation* but the *deluge*!!

If still we would rescue this anti-scriptural Theory from dying before our face, and should say that the Mosaic *creation* must not be intermixed with geological phenomena, and with revolutions which her discoveries bring to light; but that the Bible *creation*,

in speaking of *commencing* existence and not of its *destruction*, must mean something different and distinct from all the physical changes and catastrophes of M. Cuvier and his associates, in geological science.

To this I answer. This evasion is only "darkening counsel by words without knowledge". For the scriptures inform us of the creation of vegetables, animals, fishes, and man. And that all the beings of this new created (or I suppose we must now say, newly *formed*) world, were put under Adam as their head and governor, and received names from him as descriptive of the various characteristics of their new natures. But if, as the very essence of their Theory asserts, the world was full of living beings, shells, fishes, fowls, reptiles, and quadrupeds, thousands of years, and some of them "thousands of ages" *before* the creation of man, *none* of which *existed* in conjunction with the human race, it is perfectly certain that those animals must have been destroyed at our creation, or, which is the same thing in every point of view, at that revolution which was *antecedent* to our creation, and whose destructive operations made "*that creation*" necessary.

If any one should after all say, M. Cuvier's system, consisting of an *interchange* of *land* and *water* as the cause of the revolutions, would not allow the "Paris formation" which is *on land* to have been the *last* formation *but one*, which must have been *in the sea*; I can only say, I am still content, as to the *result*. I admit that *his* Theory does suppose the antediluvial, or the *last* habitation *but one*, both of animals and man, to have been where our *sea* now is. (174) But

I observe in answer ; *First.* All the *strata* by which alone M. Cuvier judges of the successive revolutions, are found *on land* and not in the *sea* : of which revolutions the Paris formation is the last but one, as above argued. *Secondly.* Mr. Buckland in this particular differs from M. Cuvier. All *his* demonstrations from “caves” &c. depend upon the supposition that *our land* was the scene of the operations of the *antidiluvial* animals, and consequently they were *created* upon it, and *this* earth was fitted for them, at *our* creation. *Thirdly.* It will hereafter be proved from scriptural data that *our land* was the actual scene for all animals of our creation. *Fourthly.* I care not about the *name* or *nature* of the particular stratum formed at our creation. I fix on the “Paris formation” because it is the *fair one* which that *system* requires. But if *Theory* should be *denied*, my *argument* is still *the same*. For *every* stratum would give the same result. And *the Theory* will allow of but *one stratum*.

Nothing now remains but for professed christian Geologists to go over to their continental brethren in that science, and assert that “revolutions were not and need not be followed by “*new creations* ;” but that animals were derived in succession from the same sources as the successive strata, or from some causes hidden indeed from man, or from some “other part of the globe,” though all the world was drowned. M. Cuvier says ; “I do not pretend that a new creation was required for calling our present race of animals into existence.” 126—But then what becomes of the credit of *Moses*, if no “*new creation* was required for bringing our present race of animals into exis-

tance.” We shall not only prove the Bible in error when it speaks of creating the “*earth*” for man, but it will be found equally in error when it declares that God created the *birds*, and *animals*, as well as man!!!

There is abundance of matter connected with this subject to understand which I trust we now have a clue. That is, the different inventions of professed Christians, and Divines and Geologists, for the purpose of reconciling geological speculations with scriptural record. That this is a vain expectation we are pretty well prepared now to decide. But this we must do by a collation of the subject with the decision of the Bible.

CHAPTER IV.

ATTEMPTS TO RECONCILE THE BIBLE NARRATIVE WITH GEOLOGICAL THEORIES, INVESTIGATED.

I FEEL persuaded that the writers and speculators who give such ready credence to Theories which bear upon Biblical history, do not adequately comprehend the true character of either. I am not indeed sure that the extensive knowledge and acuteness of M. Cuvier do not enable him to perceive something of the bearing of his Theory upon the Bible. For where the record of our *deluge* corresponds with his own system he pays it respect enough to fix upon the *Mosaic* era. As however he has not once referred to the record of *creation* as bearing any analogy with his series of Geological catastrophes, it is not certain that he did not perceive their discrepancy. With respect to our English Geologists who view physical science as M. Cuvier does, but whose judgment is convinced of the truth of scripture, I feel satisfied that they are "caught with guile." And being bewildered by the fascinating speculations which are become the *fashion of the present times*, they try to believe two irreconcil-

able systems, without minutely investigating their disparities, or understanding consistently their relations.

In the last chapter we endeavoured to obtain a clear view of the *physical state* of our globe, of that state in which it must necessarily have been found at the last revolution *but one*, according to the genuine result of the *geological Theory*. We must now see if we can obtain a knowledge of the *state of the earth* from *scripture*, at a period corresponding with that geological era. We shall then be able to compare them together.

Geologists have not indeed informed us with any accuracy how they suppose the earth to have been circumstanced at any creation. We have seen, however that it is required by their theory to have been very much as it is at present, except some variations upon or near its *surface*. And M. Cuvier's system, if *strictly* interpreted *here*, would make even the Diluvial or loose strata consisting of sand, clay, loam and gravel, to have been the *lowest* part of the earth affected by the last revolution *but one*. Because in the *lowest* part of this *Diluvial* deposit, he considers the "extinct species" to be found; which extinct species his system requires to have been destroyed by the last revolution *but one*. *That* revolution, however, was *our creation*. But as Mr. Buckland considers that these "extinct species" were drowned at *our deluge*, and therefore, not at the former revolution, namely, *our creation*, I have, for the sake of allowing their system all its advantage, admitted for the present Mr. Buckland's hypothesis.—*This* is what obliges us to descend from the "extinct *species*" found in the

lower Diluvium, to the “extinct *genera*” found one remove *lower*; namely, in the “Paris formation.” *Lower* than this we cannot go for the operations of our creation, without destroying entirely the whole foundation of their universal theory.

I admit there is great difficulty in knowing how to arrange the multifarious and bewildered mass of matter with which the speculations of geologists present us with. And if, after very great and painful deliberation upon these subjects, I shall at last be found to have located them disadvantageously, I trust the candid reader will make some allowance.

I shall here give a summary of the views of modern geologists as they regard the scriptures; and shall try to analyse and separate their essential and important parts, for the more ready comparison of them with the Bible narrative.

1. M. Cuvier’s reflections on this point. He says, “During a long time, two events or epochs only, the Creation and the Deluge, were admitted as comprehending the changes which have occurred upon the globe; and all the efforts of geologists were directed to account for the present actual state of the earth, by arbitrarily ascribing to it a certain primitive state,^x afterwards changed and modified by the

^x “By *arbitrarily* ascribing to it a *certain primitive state*” I neither wish in this note to anticipate this subject which will probably be discussed in another place, nor unduly to prejudice the readers’ mind against this celebrated author. But if he *means* any thing by thus censuring *believers in the Bible* for “ascribing” to the EARTH “a *certain PRIMITIVE STATE*,” and calling it “arbitrary” so to *ascribe* it, he must mean not only that the *Bible* is in error in positively and exactly ascribing to the Earth, as it unquestionably does, “a *CERTAIN PRIMITIVE STATE*,” but also that *Geology itself*

“ Deluge, of which also, as to its causes, its operations,
 “ and its effects, every one of them entertained his
 “ own theory.”

“ It is very easy to see that though naturalists might
 “ have a range sufficiently wide within the limits pre-
 “ scribed by the book of Genesis, they very soon
 “ found themselves in too narrow bounds: and when
 “ they had succeeded in converting the six days em-
 “ ployed in the work of creation into so many periods
 “ of indefinite length, their system took a flight pro-
 “ portioned to the periods, which they could then dis-
 “ pose of at pleasure.” (p. 39, 40, 41.)

In this last paragraph, either the translation has not done justice to the original, or else we may discover here, as in some other places where a reference is made to the *Bible*, an odd kind of *ambiguity* in the phraseology. Certainly, that “*range*” is not “*sufficiently wide*,” which is circumscribed by “*too narrow bounds*.”

2. Mr. Faber says,

“ We have our choice of two theories. The one is,
 “ *that the six days are six periods, each of immense*

affords no evidence of a “*PRIMITIVE state of the Earth*;” and therefore it is an *arbitrary* and unwarranted assumption to ascribe a “*primitive state*” to it. This, however, is precisely the *Atheism* of the ancient Philosophers, who believed that the world had *no* “*primitive state*,” but had been undergoing an endless series of revolutions from eternity!—This is not the only passage in which our author intimates, that thoughts “*respecting the first origin of the world and other planets*,” are no better than “*fancy*,” “*romance*,” or “*so many contradictory conjectures*.” pp. 39, 17, 48, 182.

To obviate unnecessary objection to what is here advanced, I must observe that M. Cuvier writes these things with the full view of what the *Bible* says about the “*first origin of the earth*,” and without making any exception whatever in its favour.

“length; and that in the course of these six periods, the
 “universal organization of crude matter was effected:
 “the other is; that a very wide organization of crude
 “matter was effected prior even to the first of the six
 “days; that the six days themselves are six natural
 “days; and that during their lapse was effected that
 “subsequent organization, of which alone, in his Cos-
 “mogony Moses is understood as treating.”^y

“Of these two theories (Mr. Faber adds) I have adopted the first.”

3. *Mr. Buckland* adduces several hypotheses.

(1) The first which he conceives impossible, “ascribes the formation of the strata to a period so short
 “as a single year occupied by the Mosaic deluge.”^z
 —on the other hand he tells us “facts prove their slow, gradual, and successive deposition.”

(2) “It has been supposed by others, with greater
 “plausibility, that these strata have been formed at the
 “bottom of the antediluvial ocean” and raised to land
 “by “the deluge.”

(3) “A third hypothesis may be suggested, which
 “supposes the word ‘beginning’ as applied by Moses
 “in the first verse of the book of Genesis, to express
 “an undefined period of time which was antecedent
 “to the last great change that affected the surface of
 “the earth, and to the creation of its present animal
 “and vegetable inhabitants, during which period a long
 “series of operations and revolutions may have been
 “going on, which as they are wholly unconnected
 “with the history of the human race, are passed over
 “in silence by the sacred historian, whose only con-

^y Faber, vol. 1. p. 156.

^z Lect. p. 30.

“cern with them was barely to state, that the matter
 “of the universe was not eternal and self-existent, but
 “was originally created by the power of the Al-
 “mighty.”^a

(4) “A fourth hypothesis is—that the days of the
 “Mosaic creation are not to be strictly construed as
 “implying the same length of time which is at present
 “occupied by a single revolution of our globe, but
 “PERIODS of a much longer extent.”^b

(5) The Quarterly reviewer whom I before quoted
 in page 2, informs us in like manner, that

“The usual mode of solving the difficulty has been
 “to interpret the six *days* of creation—as indefinite
 “periods; to this explanation Mr. Buckland seems
 “disposed (in his Inaugural Lecture,) to incline.”

(6) Some friends and correspondents at Cambridge
 and Oxford speak of this matter in the same strain.
 “This original world underwent successive revolutions,
 “the last of which leaving it without form and void,
 “and in a state of darkness, gave occasion to the six
 “days work recorded in Genesis, as the commence-
 “ment of the present system;” which system is
 supposed to begin when God said “let there be
 light.” This corresponds with the *third* hypothesis
 of Mr. Buckland.

On these various hypotheses I may remark that
 they all (except the two first which are mentioned by
 Mr. Buckland, and which he *rejects*) suppose that
revolutions have occurred in the *earth* previous to the
 creation of man. And

^a Lect. 31.

^b Idem. p. 32.

That they all resolve themselves, as Mr. Faber has justly remarked, into *two* solutions.

(1) The first hypothesis lengthens the *six days* of creation into "*periods*" of indefinite extent.

(2) The second supposes the revolutions to have been effected in great measure, *before* the "*six days* work commenced.

The *first hypothesis*, of course, supposes that a lengthening of the "*six days*" into long *periods* is the only thing required in order to make Geology accord with the Mosaic narrative. And that in fact six "*periods*" substituted for six *days* in that history, will bring matters to an exact correspondence and agreement, between the *divine record* and the theories of *Geology*.

The *second hypothesis* supposes the revolutions to have taken place before the *detail of our creation*; and that all that Moses means by what he has recorded about the "*six days*" *work of creation*, is to be considered as confined to "a preparation of this globe for the reception of the human race."

These *two hypotheses* must be particularly attended to. The *first* of these considers *Moses* to *describe* the whole process of the *formations* and revolutions from the beginning. The *second* supposes the mosaic narrative to *find* all those lower formations and revolutions already effected. Into *this series* of revolutions our creation fell, and fitted the earth for man.

This first hypothesis, which converts the "*six days*" of creation into indefinitely long *periods*, M. *Cuvier* speaks of as *commonly* resorted to; Mr. *Faber*, we see, adopts it; and it is the *fourth* hypothesis in those we

have quoted above from Mr. *Buckland*, which his *Reviewer* and Panegyrist in the *Quarterly* considers as the *usual* solution and that which Mr. *Buckland* inclines to. Mr. *Buckland* however, seems inclined to call in “the assistance of *either* of the two last, (and perhaps more especially the third.)”^c

The *second* hypothesis; for they are all indeed reducible to *two*,—(the *two* first hypotheses mentioned by Mr. *Buckland* belong to *another system*; namely, to that which interprets the scripture literally, and therefore needs no hypothesis to reconcile it with the sacred record,)—The *second* hypothesis is similar to the *third* recorded by Mr. *Buckland*, and which he himself appears to adopt, because he says in another place, that “Moses confines the detail of his history to the preparation of this globe for the reception of the human race.” With *this* view of the Mosaic Creation, this second hypothesis agrees. And with this our Correspondents alluded to in the 6th class recorded above, at Cambridge and Oxford, accord.

Before I proceed to examine these hypotheses respectively, it is worth while to remark, what indeed is no small objection to them both, the extreme levity with which these hypotheses treat the sacred writings, and the remarkable laxity and indistinctness with which they suppose the sacred penmen to have written. Or it may perhaps only mark the indistinctness and confusion of the subject in the minds of these geological-speculators. For, however essentially and widely different our geologists may consider the *ancient* formations of the earth to be from that *modern* formation

which consisted in its "*preparation for the reception of the human race,*" it is a fact that the *first* hypothesis considers the *sacred narrative* to describe those "*ancient formations,*" while the *second* hypothesis confines the detail of that narrative to its *modern* formation, its preparation for the reception of man.

I hope we have now reduced our labour to a tangible shape, and brought the subject into such form before the reader, that he cannot but comprehend how the matter stands. I have no idea that any hypothesis relative to this point has been or can be started, which will not essentially coincide with one of the above. And these, let it be remembered, are invented by professed christian geologists, for the sake of reconciling the Mosaic narrative with modern geology. With *modern* geology: For by M. Cuvier's admission, it was a "*long time*" before biblical readers would consent to such a compromise; or, rather, I should say, to such a *sacrifice* of scriptural veracity. My readers may now, however, have an opportunity of judging for themselves.

We shall have two difficulties to encounter, take which hypothesis we will. Our hypothesis must agree both with *Geology* and the *Bible*. If we suppose, with the first hypothesis, that the Mosaic narrative describes all the process of the various formations, the process of that *narrative* must accord with the *geological* process, that is, the *number, order, and fossil remains* must correspond in both cases.

HYPOTHESIS THE FIRST.

This hypothesis considers the *Mosaic narrative* to give a genuine and correct relation of the order in which the "*fossil strata*" have been formed, only it supposes that the "*six days* of creation are necessarily for that purpose, to be understood as *six periods* of indefinite extent.

God made the earth and every thing upon it in six days. Or according to this theory, it must be, in *three days*. For the *first* day was occupied by the formation of *light*, which could make no change in the *physical* structure of the globe, or produce any of its revolutions. The *fourth* day was appropriated to the "*heavenly*" bodies, which must therefore be exempt from the process affecting the "*earth*." And the *sixth* day was engaged in forming *man* and *modern* animals; which, however, do not belong to the inquiry concerning the *ancient* formations. It would seem moreover that the work of the *second* day, namely the formation of the "*firmament* or *expanse*, was in no way immediately concerned with any material *physical* changes in the substance of our globe. So that we should have but *two*, or at most *three* days work in the whole creative process.

There are then—*one* physical revolution on the third day; and *three* periods of *vegetables*, *fishes*, *fowls*, and *animals*: and these on the *third*, *fifth* and *sixth* days. But the *sixth* day was the day in which *man* was created.

This then is the *process* which the sacred historian has recorded. And with this christian Geologists are

bound in honour and conscience to agree. If they fail here, they fail for ever. For agreement and concord is the very hypothesis itself, provided we admit the six *days* to be exchanged for six *periods*.

The *geological* strata, therefore, both as it respects

1. The *number* of *revolutions*.
2. The *number* of the strata inclosing "*fossil remains*," and
3. The *order* in which those "*fossil remains*" are deposited, must accord with *this process*, which the *sacred narrative* has given us.

This is the grand *crisis* between *Geology* and the *Bible*, as it regards the *first hypothesis*. If they agree, we, as christian believers have no quarrel with geology on any other grounds. We wish them "good luck in the name of the Lord." But let it not be forgotten that our christian Geologists, and above all that portion of them which bears the stamp of *divinity* as well as of geology, ought out of regard to the honour of their science as well as the honour of the Bible, to come to a point upon this head. They are certainly bound in duty and interest to make *this agreement* of their *sciences*, which I may be allowed with due reverence for *divinity* and respect for *geology*, to call them, a *first object*. Great good ought to result from the strict and rigorous examination of this agreement or disagreement. It is essential to the very *first principles* of all good reasoning, whether it respects *theory* or *practice*, that *two sciences* professing to be true, and both bearing directly upon the *same subject*, should be most scrupulously examined as to their disparity or accordance.

If the *Bible* and *Geology disagree* it is utterly impossible for any man to indulge in “*speculating*” upon Geology, without directly or indirectly violating that respect and submission which the “*word of God*” requires.

If however the Bible and Geology shall be found to accord, geology as a *science* will be a great gainer by the discovery. Geologists will reap two advantages from it.

1. They will derive *confidence* in the pursuit of their *new science*, by the assurance that it accords, as far as they approximate, with another science known and proved to be true for thousands of years.

2. They will derive *assistance* from the alliance. Because, having already before them in the Bible narrative, an infallible outline of all they must expect to find in the bowels of the earth, they will know certainly, *a priori*, in undertaking any new investigation, what *strata* and what *order* of fossil remains they will certainly meet with.

It is therefore, matter of deep regret that Mr. Buckland and his learned friend the Reviewer, (who, credible information assures us, is one of the most renowned divines in the University of Oxford,) should not have made this point of accordance between geology and the Sacred Volume, clear as noon-day. And it certainly warns us beforehand to expect a failure when the agreement is investigated. To this then we shall now attend.

In order however to keep the subject in as simple and authentic a shape as possible I shall not mix up any divergent matter with the case; but take the

arrangement which we have already laid before the reader, from M. Cuvier's scale of "*secondary formations*." These "*secondary formations*" the reader knows, is the precise subject of the present examination. And their *number, order, and fossil remains* are to agree with scripture. More than such an accordance we cannot have, and less will be an insult both to the Bible and to Geology.—Let us than collate them.

I. THE SCRIPTURES, ON THE PROCESS OF CREATION.

1. The "*first day*," or period, God created "*light*."—Gen. i. 3.

2. The *second*—The "*firmament*," the expansion; or, as it respects us, our *atmosphere*.—Gen. i. 7.

3. The *third* period—The "*waters*" which hitherto appear to have surrounded the earth, were caused to retire, and the "*dry land*" appeared.—This appears to be the *first and only physical revolution*.—v. 9.

In *this third period*, the earth brought forth *grass, trees, and vegetables*.

4. The *fourth period*—The *heavenly luminaries*.—v. 16.

5. The *fifth period* — *fish and fowls* were created, perhaps both from the "*sea*."—v. 21.

6. The *sixth period*—*animals and man* were created.—v. 24. 28,

This process then affords,

1. *One PHYSICAL revolution*; The third day or period.

2. *Three* days or periods—The *third*, *fifth*, and *sixth*, for vegetables and animal productions.

1. *Vegetables*—in the *third* period.

2. *Fishes*, and *fowls*,—in the *fifth* period.

3. *Animals* and *man*—in the *sixth* period.

All then that we can derive from *this process* is *one* revolution in the *physical* state of the earth,—and *three* or at most *four* successions of *vegetables* and *animals*. But what is *remarkable* here is, that the *only revolution* which takes place in the *physical* character of the earth, takes place BEFORE either *vegetables*, or *animals*, or *fishes* are created. And *no revolution* takes place in the *structure of the earth*, AFTER even *vegetables*, which are the *first* thing, are produced!

1. *This circumstance* of itself is utterly destructive of every pretence of *agreement* between the *Mosaic narrative* and *physical geology*. For if the reader will turn to p. 22 to M. Cuvier's scale, which is there transcribed, he will at once see that all the physical revolutions concerned in the formation of the "*secondary strata*," and which is the precise subject of the present inquiry, are *necessarily* SUBSEQUENT to the production of *vegetable* and *animal* beings. But, we see, that the *only revolution* recognised in the *Mosaic narrative* is *before* and *not after* any one of them!

Again. Instead, moreover, of finding as he does in the *Bible*, only *ONE revolution before the creation of man*, the reader, from the scale of M. Cuvier, as it respects the *PHYSICAL strata*, will derive *FIFTEEN*! And if he confine his *physical revolutions* to the *Fossil strata*, he will then find *TEN*!!

2. But in the second place. The *number* and *arrangement* of the "*animal remains*" which are assumed to distinguish the revolutions and *successive* formations, must correspond between Geology and the Bible. But here again we have death upon death. There is not the most *distant agreement* either in number or kind.

The Bible gives us most distinctly and expressly,

1. *Vegetables,*
2. *Fishes and fowls.*
3. *Animals and men.*

In NUMBER then, there can be but THREE successions, as the *Bible* records it. But in Cuvier's *geological* table, we have, at least TEN!!

The ORDER too, in the Bible is *first vegetables*. And what is here again remarkable, we have *vegetables* ALONE, from the *third* to the *fifth period* however long those periods are assumed to be. Next we have *fishes and fowls*. And, in the *sixth* period, *animals*. But we have not the shadow of agreement with all this, in M. Cuvier's *arrangement*. He records

1. "*Fossil shells and corals,*"—not "*vegetables!*"
2. "*Fossil wood,*—not *fishes and fowls!*"
3. "*Fossil corals and shells,*" again;—not "*animals!*"
4. "*Fossil plants;*"—*vegetables*" over again!
5. "*Fossil fish and fossil oviperous quadrupeds.*"
6. "*Fossil shells, corals, and vegetables.*"
7. "*Fossil shells, corals, lacertæ, fishes and vegetables.*"
8. "*Fossil shells corals, lacertæ, turtles, and fishes.*"

9. “*Birds, and mammiferous animals.*”

10. “*Remains of extinct species of elephant, rhinoceros, hippopotamus, tapir, deer, hyæna, bear.*”

11. “*Fossil remains of the human species.*”

This is probably the most extraordinary *discrepancy* which was ever supposed by men of understanding to be an *accordance*. We see that *vegetables*, which the Bible places *first* are here second:—*fishes*, which the Bible puts *second*, are by geology, placed *first*. And “*birds* which *Moses* ranks, in time, with *fishes*, which M. Cuvier puts *first*, are placed by Geology in the NINTH strata. *Shells and corals* come over again *half a dozen times*, while the Bible process records them only *once*. “*Animals*” and *men* are in the *Mosaic* process, placed *together*, and *all* in the *third* order; but *geology* divides animals and men into *three classes*, and ranges them *nine, ten, and eleven!!!*

Such then is the AGREEMENT of the *Mosaic narrative* with the arrangements made by *theoretical Geologists*. The *Bible* admits of *no revolutions* among the secondary strata; *Geology* requires *ten*, or perhaps twice or thrice or more probably ten times that number.—The “*vegetable and animal*” orders moreover, have no correspondence, either in *number* or *arrangement*.

For *what purpose*, then, it may reasonably be inquired, have *Geologists*, as M. Cuvier informs us, been accustomed to convert the “*six days* employed in the work of creation into so many *periods* of indefinite length?”—For *what purpose*, as his reviewer, before mentioned, understands to be the case, does Mr. *Buckland*, a professor of geology, and a divine of the

church of England, “incline” to the same device? To *what purpose* does Mr. *Faber*, another most ingenious and learned divine of the Church of England, adopt this notion of six “indefinite *periods*” instead of “*six days*,” as the Bible records it.—For what purpose has the “CHRISTIAN *Observer*” transcribed the whole of Mr. *Faber*’s invention into his own pages?—And for *what purpose* does this divine last mentioned, spend 156 pages of this work to *prove* that the “*six days*” mean each a period of many thousand years, and for the sake of which “*periods*” he by consequence gives up entirely the “*Sabbath day*!!!

I have no wish to reproach or speak evil of any man. I have no wish to believe, nor do I in the least believe, that any of these Divines and Geologists who adopt this hypothesis, mean to speak absurdly, or to degrade the scriptures. I have the highest opinion of Mr. *Buckland*’s integrity, and of Mr. *Faber*’s and the *Christian Observer*’s sincerity. How then it will be asked, are we to account for the very extraordinary manner in which Mr. *Faber* has written upon this subject? He clearly understood it. He viewed it as we have been arguing it must be received, in order to make the Bible and Geology agree. He argues with great correctness, that

“The *order* of the *strata*, provided the scriptural cosmogony be authentic, must correspond with the “order of formation as detailed by Moses.”

Mr. *Faber* had also M. *Cuvier*’s book before him and not many pages afterwards he transcribes into a note, M. *Cuvier*’s very scale of formations which we also have given above. And by some means or other he is

induced positively to assert when he has detailed the order which he supposes the *Bible* to authorise, that is, vegetables, fishes, birds, land animals and reptiles, † that

“Such is actually found to be the succession of organized fossils:”—they all rest upon the primitive granite, which contains no extraneous fossils: and they follow each other upwards in the precise order of the Mosaic narrative.”—He proceeds,

“Of the two theories, I have adopted the first: (which changes the *days* into periods) and the reason of my preference is, because it quadrates at once, both with the actually ascertained order of fossil stratification, and with the most obvious interpretation of the sacred narrative.”

“As for the order of fossil stratification, it is found exactly to agree with the order observed in the work of the six days: so that the alleged productions of an earlier day are constantly discovered beneath the alleged productions of a later day.”

“Now this remarkable coincidence affords, so far as I can judge, a physical demonstration, that the order of the six days and the order of fossil stratification stand immediately connected together in the way of cause and effect. For, unless this be admitted, we must ascribe, not very philosophically, the uniform coincidence in question to mere unmeaning chance.”

Now we have seen that there is not the least correctness in all this pretension to “*coincidence*” and “*agreement*.” They do NOT agree in any one point—either in *number, order, fossil remains, or revolutions*.!!

Mr. Buckland it is true does not like Mr. Faber *trace* the precise correspondence between geology and the Bible. But both he and every one else who resorts to this mode of reconciliation between them, must certainly be considered as *implicitly* adopting the arrangement as Mr. Faber has done.

I need not here insist upon the extraordinary mistake into which Mr. Faber falls in his classing *fishes* and *fowls* in immediate succession, *fishes* in one revolution, *fowls* in the one immediately following. But this as they live in different *elements* can never be the case. A revolution indeed subsequent to that of the fishes in the sea, would destroy the fowls; but this would fossilize the fishes in the *sea*: yet the fowls would not be in the stratum *above* the fishes; but in another *part* of the earth, that is, the *land*, not the *sea*.

The inference I would draw from this extraordinary *fancying* of *coincidence* and *agreement* where there is positively no evidence for them but the uttermost possible demonstration against such agreement, is this; namely, the bewildering and fascinating power of “*theory*” and “*speculation.*” Who can but regret that the plainest evidence should be run counter to in the pursuit of a perfect nonentity.

Another observation I would here make, which I deem of vast analogical importance, is this. If Mr. *Faber* a *christian divine*, without any but the best wish to support the Bible narrative, could allow himself to be so led into a belief of things which have no existence, how much more may we expect theory and imagination to beguile such speculating adventurers as

M. Cuvier, &c. And how much may we account for from this idea, in theories and whimsies which have no reality.

II. HYPOTHESIS SECOND.

This second hypothesis, which is framed for the purpose of conforming the *Mosaic* narrative to their geological theory, supposes the “*strata*” of our globe and the “*revolutions*” which destroyed the animals whose remains are imbedded in those strata, to have taken place before the period of man’s creation. At least it supposes that a large number of the revolutions and catastrophes had happened long before: but that as they gradually approached the present era, each revolution was accompanied by changes both in the earth and in the animals it sustained, more nearly allied to the present state of things. The early, or lower strata, as we see in *M. Cuvier’s table*, supported only “shell fish,” or vegetables; by and by fishes, amphibious animals, and reptiles; afterwards large and small land animals, but unlike our own. And lastly, such as cannot be distinguished from the present existing races.

This Theory, like the preceding one, considers that every revolution and its operations introduced changes in the earth suitable to the natures of its succeeding occupants, the last of which are the human race and existing animals. The two hypotheses agree in every thing respecting *geology*, but *this* accommodates the *Mosaic narrative* to that geology in a different way

from the former. The former supposes the Mosaic narrative to embrace all the revolutions from the primitive formations. *This hypothesis views Moses as confining the detail of creation to the "preparation of this globe for the reception of the human race."* This, without however rejecting the former hypothesis, seems to be Mr. *Buckland's* view of the case.

This view of the creation recorded by Moses, as being confined to the "*preparation of the earth*" for the reception of man, accords with the general notion of Geologists, that each revolution of the earth was suited to the character of its future inhabitants: it agrees too especially with Mr. Sumner's view of this matter, where he speaks of "*that creation which Moses records.*" Hence then we learn that each *revolution* was a *creation*, and each *creation* a *revolution*. Or perhaps more accurately, each revolution destroyed the animals then found upon the earth, but prepared that earth for their successors. As the creation which Moses records prepared the earth for man, the revolution which succeeded it destroyed its prior inhabitants, and made way for those races which accompanied mankind. The *last revolution* which changed the face of our globe was the Mosaic deluge: and the *last but one*, "*that creation which Moses records.*"

We are now pretty well prepared to appreciate the *geological* character of the Bible creation. It is merged in the *revolutions*, and is *one* of them. The *Deluge* was the *last revolution*, and our creation *the last but one*. And the operations of that revolution *prepared*

the earth for "the reception of the human race;" as Mr. Buckland says; "Moses confines the detail of his history (of creation) to the preparation of this globe for the reception of the human race."

This being admitted, the question now remaining is this; What does the "preparation of this globe for the reception of the human race" imply? How much was done to the earth? And of what nature were the effects or operations upon it? How far was its *form changed*? or what *additions* were made to its contents?

Here again the *two difficulties* encountered under the preceding hypothesis, must be encountered a second time; viz. This "*preparation of the globe for the reception*" of man, must *correspond* both with *geology* and with the *Bible*; for its only office is to *reconcile* these two. This must be distinctly understood, for the whole business turns on this point.

1. The *state of the earth*, both before and after this preparation for the use of man, *must accord with geology*.

2. This preparation, moreover, must *accord with the scripture narrative*. It must *occupy the whole space*, it must *embrace* all the *particulars*, it must *satisfy the whole detail* of the "*six days*" creation.

This subject will now resolve itself into two inquiries; namely

HOW MUCH WAS DONE? AND,

BY WHAT MEANS WAS IT AFFECTED?

These are two inquiries of awful import. To a christian ear it will necessarily sound very strangely, to ask him *how much* was *done* at that *creation* which the Bible records. Because he has been accustomed to say; "every thing was done then." Then God

created the "heavens and the earth, the sea, and all that in them is;" He left nothing undone.—And if you ask him; 'by what *means* creation was effected,' he will stand astounded at the question. Because the Bible every where says of *God*; "I am the Lord that maketh all things; that stretcheth forth the heavens ALONE; *that spreadeth abroad the EARTH BY MYSELF.*"—This will of course form a subject for future consideration.

The *present* inquiry is, how much was done at "*that creation which Moses records,*" and which, according to Geologists, is properly designated by its being a "*preparation of this globe for the reception of the human race.*" This point has two aspects. It must accord with GEOLOGY. It must accord with the MOSAIC NARRATIVE. All I need notice further in this place is;

The accordance of geology with the Mosaic account of creation, viewed, as this hypothesis which we are considering will have it, as a "preparation of this globe for the reception of the human race."

The reader will remember that we have before discussed the subject of *revolutions*, and that our creation falls into *that series*, according to geology, and becomes the *last* revolution *but one*. This, we have particularly considered under the subject of the "*Paris formation*;" The "*Paris formation*" being that stratum which incloses the remains of the "*Palæotheria,*" or "*extinct Genera*" of M. Cuvier, which was also shewn to be the *next deposit* below our *deluge*, and of course, applying to *that revolution* which forms the next in the series to our *deluge*, and which answers to our "*creation.*" I must beg to refer the reader

to what was there said, to see how impossible it is to call *that formation*, which, without utter destruction to the whole system of geology, is all which could be effected at that epoch, a *creation*. Its substance is nothing. Its importance is nothing. Not even a "white-wash" to the walls of a house, much less a building of the house itself.

If we were, for the sake of argument, though to the absolute ruin of Geology were she to accept the boon, to allow that *all the ten, dozen, or fifteen "secondary strata"* were formed at *our creation*, it would bring the matter no nearer to an agreement with the language and meaning of the *Bible creation*. For as the "Paris formation" does not bear to the earth a greater proportion than a wash the *tenth* part of the thickness of common Bath letter paper, to a twenty-inch wall, *all* these strata if fifteen or twenty times as large as the Paris formation, would then only amount in substance to a sheet of strong paper. But with this allowance, the *hanging* of a room with paper might as properly be called the building of the house, as the formation of all these strata, be called the making of the earth!!—so that we gain nothing by our adding more strata than *one* to the result of *that revolution* which constitutes our creation; because the whole is only superficial.

It is probable however, that the obvious language of Mr. Buckland will supply an argument, peculiar to this place. And it may be said that the "Paris formation," or that stratum whatever it may prove to be, which is *next under the diluvial debris* and which therefore answers to *our creation*, may, notwithstanding its thinness and want of importance in point of

bulk, be called a *creation* because of the very important ends it was intended to answer, and because of its peculiar suitableness to answer those ends,—Namely, what Mr. Buckland calls it, “a preparation of this globe for the reception of the human race.”

To this I would reply that the language, namely, the “preparation” for man, as applied to the “Paris formation” or any of its connections, is delusive and misapplied. I admit that our earth as God created it, was a beautiful and highly suitable “preparation for the reception of the human race.” But that the “Paris formation” or any of the flætz rocks” (and under the loam, clay, and gravel which Geologists ascribe to our deluge and not to the creation there is nothing else but flætz) or flat rocks, is at all a suitable “preparation” for the habitation of man, is positively untrue. They would indeed furnish him with materials of stone and metals for the building of his house, and with implements to work with. But they would afford him neither food nor clothing. For, take away the diluvial loam, clay, sand, and gravel and we shall not find generally the least soil, over the whole earth, at all suitable for growing vegetables either for animals or man!

I know that the *defect*, or want of loose soil for vegetables, upon the various rocky strata, which ought every where to be found upon each successive formation where land animals lived, but which is only found in small and few patches, is destructive of itself to this geological theory. But all I am here concerned to shew is, that there is nothing whatever in the formations beneath the superficial loam, clay, sand, and

gravel, which has any peculiar *suitableness* in it, in any shape to entitle it to be called a “*preparation* for the reception of the *human race*.”

Once more. The “*Palæotheria*,” and other numerous *land animals*, which Geologists inform us were *big as the elephant* and small as our *deer*, all of which, according to this Theory, lived and died *before the creation of man*, would need a *suitable soil for vegetables*, and they could not exist without it. *That soil*, then, whatever it might be, which supplied suitable food for animals so numerous and so enormous, could not be a soil at all *unsuitable* for the use of *man*. Especially, as all this food must have grown spontaneously and without cultivation; for by the very hypothesis itself, “*there was not a man to till the ground*.”

Again. If, however, the *importance* of the revolution as it respects its operation upon the earth’s surface, and its *suitableness for the use of man*, rather than its *quantity of formation*, may justly entitle that revolution to be called a *Creation*; then I would answer that *our DELUGE* has an infinitely better claim to be called a *CREATION* than has the *Creation* itself. For with respect to its *IMPORTANCE* as a “*PREPARATION of the EARTH for the USE of the HUMAN RACE*,” it is unquestionably, *upon every hypothesis*, infinitely the most material and *beneficial revolution* which *this globe* has experienced since the formation of the world!! This is demonstrable. For,

If the Bible account of this matter be the correct account, the *whole* of the “*secondary strata*,” were effected by *our Deluge*. On the vast *utility*, however, of these “*secondary strata*” to the *service of man*,

Mr. Buckland has very properly descanted, in his Inaugural Lecture.

If, moreover, the *geological theory* be the right one, and Mr. *Buckland's* views of this matter be correct, even then, the *importance* of the *diluvial* operation upon the "secondary strata," as well as its formation of the loam, clay, sand, and gravel which that author uniformly ascribes to the *Mosaic deluge*, can never be adequately^b estimated, with respect to the use of man.—Were it not for this *loam* and *gravel* which every where cover the face of the earth, or nearly so, *man* might have toiled for years or ages, upon the surface of chalk, limestone, and other still harder rocks, before the earth could have yielded increase enough for his subsistence. Notwithstanding the pulverizable nature of those rocks, he and every creature with him, must have perished for want of food.

This however, could not possibly be the case at man's creation. For it would *invert the order* of God's dispensations, and *curse to barrenness*, not the soil of a *sinful* and polluted world, but the *primeval* glory of the work of his hands!!

To say here that vegetables might possibly be produced without a soil of loam, sand, or gravel as a matrix

^b I am aware that Mr Buckland says respecting our *deluge*, "its tendency was only to destroy." (Lect p. 30.) But I am inclined to believe that his meaning there is not opposed to the *utility* of the operations of the *deluge* upon the surface of our earth, but to shew that the deluge has destroyed existing *rocks* rather than *formed* them. But as the secondary strata contain among them the marks of diluvial action (according to many Geologists) which are of a most beneficial tendency; and as Mr. Buckland himself ascribes the most useful of all deposits, the loam, clay, and sand, to the deluge, it certainly has more *ostensible* utility about it, than any other revolution, even

for them, is absurd in the extreme. And to say that loam, sand, and gravel which might attend the Paris, or any other formation, are now *changed* into other characters, and may possibly be formed into "clay-slate," "sand-stone," and "pudding-stone," which are very analogous to these respective materials, it would only shew how little the true nature of the subject is regarded. If such formations may have been consequent upon each successive revolution, they may have been the consequence of *modern* revolutions, and of our *deluge* especially, or entirely; which I suppose has literally been the case. This however would in various ways, be utterly subversive of the whole geological Theory. It is of the very essence of this Theory, that these respective rocks, were *ancient* formations, not modern: that they were quietly *deposited* in a fluid: not formed by the incrustation, or cementation of masses of debris, or of clay and gravel on the surface.—Indeed the very subject in every way is ruinous to their system.—But I say no more on this point at present. It will probably form a subject of discussion under the consideration of the *physical character* of this geological Theory.

by the shewing of Geologists. It accords too, with the spirit of their Theory that every succeeding revolution tends to bring the surface of the earth into a more advanced state in the march of perfection.

I am aware moreover that Mr. Biddulph has lately advanced a contrary opinion. He seems to consider the cause of barrenness to have been peculiarly executed on the earth at the deluge; and that great deterioration in point of fertility then took place. I think however the contrary idea is suggested both by physiology and the Bible. "*I will not again curse the ground any more for man's sake.*" Under existing evidence, I view the *universal deluge* as a *curse* upon the antediluvial, but certainly, as a *blessing* upon the postdiluvial inhabitants of the globe.

I hold it absolutely impossible therefore, to form any hypothesis which will at all consist with the existing *phenomena of nature* on the one hand, and with the plain *narrative of the creation* recorded in the Bible, on the other, without at the same time, subverting past recovery, the theory of ancient revolutions, and demolishing to the very ground, this modern system of Geology.—The consequence of the adoption of either of these hypotheses to the scriptures will be afterwards seen. I shall only observe further in this chapter that the sum of all this is,

That, with respect to the *First hypothesis* we have been considering, which lengthens the *six days* of creation into six indefinite periods ; *periods*, if admitted, would afford no satisfaction *without the utter destruction of the Mosaic narrative altogether.* And

With respect to the *second hypothesis* which confines the “*detail*” of creation to the “preparation of this globe for the reception of the human race,” we find it quite impracticable, consistently with common sense, to call *that operation* a “CREATION” of the earth, which in *physical* capacity is, not a fifty thousandth part of this globe, and in point of comparative *utility*, is nothing like so important as the *Noahic deluge!!!*

CHAPTER V.

SECOND CAUSES, PRODUCING CREATION, EXAMINED.

WE are still considering, as was stated at the head of the last chapter, the "attempts to reconcile the Bible narrative with the geological Theories." One of the hypotheses we have been discussing perhaps both, suppose "*second causes*" to have operated for a great length of time and through many successive revolutions, towards the production of that state of things into which this globe was brought at the creation of man. Even that hypothesis which views the *Mosaic narrative* as a description of the whole process of the "*secondary strata,*" does not exclude "*second causes*" from bearing a most material part in this whole process of creation. The other hypothesis considers the whole matter in the same light, with only this difference, that Moses does not enter into the consideration of the vast series of second cause operations which went before, but confines his detail of creation to six days, six natural days, work for the reception of man.

This view of the subject, it will be instantly seen by the intelligent reader, not only changes the line of argument, but *leads out Geology into an almost infinitely more formidable array against the Bible.* It brings *theoretical speculations* on natural phenomena into immediate and almost direct hostility to the “first principles of the oracles of God.” The *former* view of these hypotheses, as we have seen and shall further see, disputed the narrative of Moses; and, by shewing his errors in the *time, order, and character* of formations, destroyed his credit as an *historian.* But *this* aspect of the case, which we have kept separate to avoid confusion, levels its shafts at nearly *all* the scriptural writers, as divines and moralists.

What for instance are we to say of Moses as a *prophet,* and of our *Saviour's* recognition of his prophetic character, if the representations of Moses are to be so little relied on? Or how can we attach any correct and consistent meaning to the rebuke of the Jews by Christ himself, for their *disbelief* of Moses respecting his predictions of the Messiah? “if ye had believed Moses ye would have believed me, for *he wrote of me.*”

The sacred writers, certainly, claim our devotion and obedience to the Most High, upon the express ground of *His* being the *Creator,* yea the *sole operator,* in the creating and forming of the “heavens and the earth the sea, and all that in them is.” But *this* Theory brings “*second causes*” as operating in the *process of creation.* Thus the aspect and character of things are totally changed. The *former* considerations confronted the *history* of creation; *this* attacks *creation itself.*

That destroyed the *history* of creation, but *this* destroys the *thing*.

We shall not now go into the *physical* consideration of this point; so much only is intended to be laid before the reader as will enable him to follow the collation of the subject with the Scriptures. No Geologist (nor even Mr. Faber) thinks for a moment of laying his system close in contact with the *Bible*. Were he to do this, he would find that either the Bible or Geology would be shattered to atoms by the collision.

M. Cuvier seems to esteem the natural, or secondary causes, rather as first causes, and as not dependent upon any unknown Almighty agent. He considers all the changes and revolutions as effected by "general causes;" and he apparently approves of the "caution" of those "who have not searched for *geological causes* beyond the established limits of *physical* and *chemical* science." (Theory 45.) Mr. Sumner and Mr. Buckland believe of course, that these "*second causes*," which is a phrase that I think M. Cuvier never makes use of, are employed and superintended by God.

Mr. Sumner, as we quoted in our second page, speaks of the innocence of that "Theory, which acknowledging the agency of the Creator, only attempts to point out the secondary instruments he has employed."¹

Mr. Buckland writes. "The present structure of "the earth's surface—is evidently the result of many

¹ "Point out the secondary instruments." We shall find it expedient, under the examination of this Theory respecting *existing causes*, to shew that *Geology* has not "*pointed out*," and cannot point out one "*secondary instrument*," at all equal to the task here assigned them.

“and violent convulsions subsequent to its original formation. When therefore we perceive that the secondary causes producing these convulsions have operated at successive periods, not blindly and at random, but with a direction to beneficial ends, we see at once the proofs of an over-ruling intelligence continuing to superintend, direct, modify, and control the operations of the agents, which he originally ordained.” (Lect. p. 18, 19.) Again.

Mr. Buckland further descants.

“We may surely therefore feel ourselves authorized to view, in the geological arrangement above described, a system of wise and benevolent contrivances prospectively subsidiary to the wants and comforts of the future inhabitants of the globe, and extending itself onwards, from its first formation through all the subsequent revolutions and convulsions that have affected the surface of our planet.” (Id. 21.)

I here wish the reader to notice a few particulars relative to the above quotations.

—That there have been “many and violent convulsions (of the earth) *subsequent to its original formation.*”

—That, “*secondary causes*, have operated at successive periods, producing these convulsions.”

—That an “*overruling intelligence*” has directed to “beneficial ends” these “revolutions and convulsions,” intending them to supply the “wants and comforts of the future inhabitants of the globe.”

—That these “*future inhabitants of the globe*” are the “*human race* :”—and that “the preparation of this globe” for *their reception*,” is that identical process of

our creation, to which Mr. *Buckland* says, “*Moses confines the detail of his history,*” and is what Mr. Sumner calls “**THAT** creation which Moses records and of which Adam and Eve were the first inhabitants.” (Id. 24, 26.)

—“*That ancient revolutions*” “the production of which is not referable to any causes now in action,” but which had “secondary causes producing these convulsions,” “that have overturned the globe,” were designed to produce that variety of surface which should be most pleasant to the eye, and best adapted to the support of animal and vegetable life”—“and to supply the various wants of its future inhabitants.” (Id. 16, 18.)

Thus we see that *numerous revolutions* have affected our globe, and numerous convulsions produced by “*secondary causes have acted beneficially* upon the earth, “*thousands of ages*” before the existence of man, or of that creation which Moses records, and of which Adam and Eve were the first inhabitants,” and indeed in order to that creation. (Id. 26.)

The system we must recollect is briefly this

—The “*primitive rocks*” were deposited quietly in a fluid, and were smooth and horizontal.

—Convulsions tore up the surface of these rocks and projected the lofty mountains, and this *before* “*animals*” existed on the earth.

—The “*secondary strata*” which contain “*animal remains*” and which may possibly be on an average from a quarter to half a mile deep from the surface, were also formed horizontally and afterwards broken up by “*secondary causes* ;” these formed the smaller

hills, and rendered the whole surface of the earth uneven.

—These beneficial arrangements led at length by numerous changes both of the earth and of the animals it supported, to the result which terminated in the *Bible history*; namely, the “creation of the human race.”

Thus then we again arrive, by perfect demonstration, to a *crisis*. If this Theory be just, it is absolutely certain,

1. That “*secondary causes*” have operated on the surface of the earth for “thousands of ages” *before* the “*human race* existed.

2. That these “*secondary causes*” have produced numerous revolutions beneficial to the future inhabitants of the globe, and were intended for their comfort.

3. That ultimately *these revolutions* brought the surface of the earth to that state of perfection which was suitable for the habitation of man; and which was in fact, “*the preparation* of this globe for the reception of the human race.”

4. That this *geological series* of “secondary causes producing revolutions” extends from the *primitive rocks* to *Noah’s flood*.

5. This consequence then is inevitable that *our creation*, or “*that creation which Moses records*”, is *one of these “revolutions”* and produced by “*secondary causes*” as well as they!

I would make two or three remarks respecting the truth of this *last* proposition, which is contained in the fifth argument, as it respects the *Mosaic creation*, and “*secondary cause producing*” it. As our creation or

rather the epoch which produced our creation, or that creation which Moses records," professess to have "created," "made" or "framed" "the earth" &c. Whatever those words may mean, Geologists must allow that *something* was done *to the earth*, by that operation. And if that process of creating, making, or framing, was "a preparation of this globe for the reception of the human race," it is perfectly clear that the Mosaic creation did *that for man* which *prior revolutions* did for the prior inhabitants of the earth. It was then, some how or other, productive of the same effects. What is therefore demonstrable in this case is,

1. That *OUR creation* is a part of *this series* of "revolutions." Or, if not, it goes either *before* or *after* it.

It does not come in *after* this series. For that series extends to *Noah's flood inclusive*, which comes *after* our creation.

If it come *before* this series, it is instant destruction to the "Theory" altogether. For the very essence and form of the Theory is, that "*thousands of ages*" elapsed since these revolutions began, *before the existence of man*, or of our creation.

It must then certainly fall in among this series of revolutions, or *no where*. But if it be not among these revolutions, then it is not at all. It is positively banished out of the world; and is literally *nothing*, and means nothing; but is a *dream of Moses*, or perhaps some fabulous "tradition" which he might have learnt in Egypt. M. Cuvier seems to believe that Moses did really learn his "history of the human race" "by tradition in Egypt." (p. 150.)

2. If however the *Mosaic creation* fall into this “series” of preparatory and beneficial “revolutions” as it needs must according to this Theory, it becomes a *revolution*—One among numerous revolutions—and no more. It will follow then that Moses when he narrates only what took place in the “*six days*” of our creation, not only, as Mr. Buckland says, “confines the detail of his history to the preparation of this globe for the reception of the human race; but he confines his attention to a *very small portion* of that “preparation.” For numerous events, it now appears, had, for unknown ages, operated *beneficially* for the future inhabitant, *man*.

3. But the *Mosaic creation* *being one* of these *revolutions* it must have been produced in the *same way* with them. And as *they* were formed, by *secondary causes* producing them, *it* must have been formed by “secondary causes producing it.” It is then a consequence which cannot be avoided;

That OUR CREATION was effected by “SECONDARY CAUSES.”

I admit that these “secondary causes,” were as Mr. Buckland argues, under the control of an “overruling intelligence;” but so are the operations of all “secondary causes” at this day, which would make *providence* the same as *creation*.

This author assures us that “laws impressed on “matter, is an expression which can only denote “the continual exertion of the will of the lawgiver.” (Lect. p 19, 18.)

The CONSEQUENCE I would deduce on this occasion,

and which was intimated at the commencement of this chapter, is this,

THAT A "CREATION" PRODUCED BY "SECONDARY CAUSES" IS NO CREATION.

The above proposition can admit, I believe, of little doubt in the mind of any reflecting and unprejudiced man. FOREIGN Geologists generally, never use the term nor express the idea of CREATION. It does not belong to their creed: at least it makes no part of their *system*. The MEANING of "*creation*" therefore, does not take its rise from the definitions or instructions of *those* Geologists. *Creation*, then, is, both in the name and nature of it, most appropriately a subject of *our own* and is not derived with our Geology, from *foreigners*.—Then, I repeat it;

That a creation which is produced by secondary causes is NOT THE CREATION.

—It is not the creation of THE BIBLE.

—It is not the creation of the CHRISTIAN WORLD.

—It is not, and never was the creation of the CHURCH OF GOD.

It is in no sort *a creation*. Much less what the Bible emphatically styles, "the creation." I am not now speaking of the *inhabitants* of the earth, but exclusively of what was done *to the "earth"* itself. The *revolution* which designates *our creation*, was, as a *creation*, much more "*the creation*" defective in every part of it. Nothing or next to nothing was *done*. It does not appear that *any new* production was *created*. There is supposed to have been only some *change* produced on the *surface* of the globe. And this change whatever it might be, was not more important to the

earth, than a white-wash to a house. And after all the change thus effected, however it might be overruled by the *Almighty*, was produced by "*second causes*."

How all this can be made consistent with the *scriptural* account of *creation* I cannot see. I am of opinion that we need go no further than to the genuine character of Geology itself, and not to "*examples of its abuse*," as Mr. Buckland has it, to shew that modern "*inquiries into Geology*" may justly "*lie under the imputation of being dangerous to religion*." Nor is it necessary in order to justify such "*imputations*," that it should be "*attempted to explain every thing by the sole agency of second causes, without any reference whatever to the first*."^k For if the "*second causes* operate *at all*, it is perfectly clear that *such* operation reduces the matter to the regular course of divine providence, and that it cannot be classed among the works of "*the creation*." For this, if I understand the subject correctly would melt away "*the creation*," altogether, and bring it within the range of that series of changes and revolutions which might very appropriately be called an *indefinite* or an "*endless series*."

For if we mean to speak intelligibly when we speak of "*SECOND causes* operating for "*thousands of ages*" prior to the *creation of man*, and in order to prepare the globe for his reception; we must mean that *CREATED causes* have thus operated. It is perfectly demonstrable that all "*second causes*" are *created* causes. For both divines and philosophers are accustomed to describe the *Creator*, as the *Divine Being*, by calling him the "*FIRST cause*." And it has ever been con-

^k Buck. Lect. p. 27.

sidered perfectly conclusive in proof of the *divinity* of Christ to shew that *He* was *the Creator* the first *cause* of all things. It is not my intention in this place to shew what *Socinians* will be ready enough to urge against the "orthodox" faith, viz. that, according to this notion of "*second causes*" operating in *Creation*, even *Christ* might be employed in *Creation*, and yet after all be himself only a *created* Being. But my object here is to make it plain to the reader that every "*second cause*" is a *created* cause, because the "first cause" is peculiar to the *Creator*. The *Creator* is *the first* cause, and the *first* only. He cannot be reduced to a *second*; because the *second* implies another above or *before* it, which cannot be predicated of the *FIRST cause*.

It is certain, then, that every "*second cause*," whatever that cause may be, is a *created* cause. But to speak of "*created causes*" *producing* "*creation*," is a solecism in language, and utterly void of intelligible meaning. For a *created* cause proves that *creation* already exists. Then *creation* cannot produce *creation*, without being *before itself*, and operating to its own production.—That one *created* being can be the instrument or *second cause* of producing another *created* being, I readily allow; but this is surely not *creation*, but a link in the series of *second causes*; which brings us again to an indefinite succession. I admit that it does not prove this succession to be *infinite*. But if the reasoning be allowed that "*second causes*" can operate in *creation*, it reduces *that creation* to the class of *second cause productions*, and destroys the nature of *creation*. Or if it be insisted that it may nevertheless be called *a creation*, I then again say, it is only a *crea-*

tion PRODUCED BY A CREATION, one created thing producing another. But this is only a chain of "secondary causes" producing their effects. Every "second cause" is a link in the chain; and having proved this we may go back as far as we please, yet we shall find nothing but "*second causes*" and *secondary results*. And *thus every* progenitor finds a *created* progenitor from whom he originates.

To call such secondary results *Creation*, is truly a novel thing. It will change the first principle of all Theology, and bring us back to the *heathenish* notion of re-productions, revolutions, and indefinite series. It will give a new gloss to the whole face of the *word of God*, in which Creation is the subject, and will quite change the *creed* of the Christian world respecting *the Creation*. And if the *scriptural* account of creation be rejected and proved erroneous, or void of correct information, there is an end of *all knowledge* of CREATION, properly so called. For the *Bible* is the only book which professes to give a history of the "*first origin of all things*." If that be gone, all is gone; because *Geology* has *nothing* to substitute in its place. Geologists never pretend to find any *beginning* of creation. The uttermost at which they ever reach is a "confused assemblage of elements (as De Luc calls it) of which water was the basis; and "it is from this first mixture that all substances whatever, which engage our observation or experience, "formed themselves."

We need not lay any stress upon the words "formed *themselves*," as it is probable our English Geologists would say that the author intended nothing more than

to express the fact, that out of "this first mixture all things whatsoever which engage our observation and experience" were formed. With this explanation, however, which many Geologists would refuse, we only arrive at a "second cause," or at a *created* mass of "confused elements." *Geology* knows nothing whence this "confused assemblage" of elements sprung. And it is quite certain that the *Bible* knows nothing of this "confused assemblage of elements," unless it be contended that *this* is the state of the earth which *Moses describes*, when he says, "The earth was without form and void, and darkness was upon the face of the deep." This coincidence of Geologists with Moses some Christian divines perhaps would be willing to adopt. And truly if Geologists would be consistent, and abide by the consequences of such an alliance, I should rejoice at the result. But we have already seen, and must, I fear, again see, that such a supposition of alliance between Geologists and the Scripture historians is as visionary as it is vain.

In the first place. If this "confused assemblage of elements, out of which all things whatever which engage our attention" were formed, be the *original* or "*first mixture*," which "*first mixture*" is described by *Moses* when he says "The earth was without form and void, and darkness was upon the face of the deep," it will prove that "Moses, the man of God," was not only acquainted with the "original elements" of all creation, but has actually described their precise geological situation, and has told us *whence they came*, and how they were *subsequently* disposed of!

But again. This would bring us back to the exact point which we have already seen is quite untenable, viz. the "hypothesis" which supposes the Mosaic narrative to *describe* the *geological* progress of the *earth* from its primitive formation to the present times. Mr. Faber, and some others, have laboured to prove this notion to be just; but we have seen its entire and absolute failure in our discussion on the first "hypothesis," in the *fourth* chapter. For there we saw that the *geological* account given by M. Cuvier, and the divine record given by *Moses*, do not in the least accord, either in *number, order, or fossil remains!*

Or, thirdly. This assemblage of elements if at all alluded to by Moses, must describe the state of our earth, *subsequently* to the numerous revolutions of which Geologists speak, and must in *fact delineate* its situation at the commencement of that revolution which was a "preparation of this globe for the reception of the human race."—This supposition would ruin the whole business. For we set out by saying, from Geology, that this is the "first mixture" out of which "*every* object which engages our attention" is formed. But this third supposition makes the mass to which Moses alludes, and of course this "*first mixture,*" of which we are speaking, to be thousands of ages subsequent to the *first* formation of the earth: and indeed, it supposes the *Mosaic* narrative not to allude at all to the *original* state of the earth, when it describes the earth as "without form and void," but to *its state* when it was about to be prepared for the reception of man.

It is perfectly certain, therefore, that the Bible makes

no alliance with Geology when Geology arrives at its *ne plus ultra*. The Scriptures know nothing whatever about this “FIRST mixture;” this “confused assemblage of elements of which water was the basis.” Nothing that is, but upon principles utterly subversive of all *geological revolutions*, and *successive, distant epochs of terrene formations!*

Thus, then, we again arrive at the fatal conclusion; namely; that Geology has taken away the scriptural account of first productions, and given us nothing in its place. Thus we are brought, indeed, into an evil case, by our alliance with this insidious science. It pretends to trace operations in the *earth*, to a period immensely distant in priority from *that* to which the *Bible* reaches. But when it has done this, Geology goes to no “beginning of the creation,” and never finds any. It knows no creation of its *own*: and having shewn the *scriptural* history of creation to be erroneous, we are completely at fault—we have *no CREATION*” left us. The whole is the operation and production of “secondary causes,” but a “FIRST CAUSE,” and a “FIRST PRODUCTION,” it never finds!!!

I have in the preceding discussion taken the language of *De Luc*. It is substantially the language of every modern Continental Geologist with whose writings I am at all acquainted. They receive with amazing facility their ideas and their language from one another; and this doubtless, very often, without strictly examining its meaning or comprehending its import.

And it is more than probable that De Luc himself, from whomsoever he derived the foregoing quotation,

did not either criticise its nature or understand its *atheistic* tendency. For every thing which I have understood of De Luc, leads me to “hope better things” of *him*.—I may here further observe that I am far from considering every Geologist who embraces a sceptical system of Geology, as being himself sceptical. But if the genuine nature and tendency of a “Theory of the earth” be *pernicious* and subversive of revealed truth, that *Theory* demands our opposition and rejection by whomsoever it may be adopted. *such a cause* is the more dangerous in proportion to the eminence, the talent, and the character of the men who espouse it.

Mr. Buckland, I am aware in one of his paragraphs, considers that the Mosaic narrative embraces both the *original* matter of the universe and *that* subsequent *revolution* of the earth which occurred previous to the creation of man, and which was a “preparation” for that event. His words are as follows ;

“If Geology goes further (than the Mosaic narrative,) and shews that the present system of this planet is built on the wreck and ruins of one more ancient, there is nothing in this inconsistent with the Mosaic declaration that the whole material universe was created in the beginning by the Almighty; and though Moses confines the detail of his history to the preparation of this globe for the reception of the human race, he does not deny the prior existence of another system of things of which it was quite foreign to his purpose to make mention.” (Lect. p. 24.)

In the third hypothesis mentioned by Mr. Buckland, and which has been at large considered, in our fourth

chapter, the same language or nearly so, is used respecting the *original* production of the universe by the Almighty, as recorded by Moses; "whose only concern with them (the revolutions) was barely to state, (as Mr. Buckland supposes) that the matter of the universe is not eternal and self-existent." (Id. 31, 32.)

The only thing which is introduced in the above quotations additional to what we discussed, relative to the *two hypotheses*, in the fourth chapter, is, the idea that *Moses* in the *first verse* of Genesis, where he says "in the beginning God created the heaven and the earth," means that God is thereby described as having created the "matter of the universe," or the "whole material universe;" but that the subsequent "detail of his history" in the same and next chapter, is confined to the "preparation of this globe for the reception of the human race." This would make the *same* narrative treat of *two creations*. The *one*, in the first verse, is supposed to include the "whole material universe." The *other*, which occupies the entire "detail," through the two first chapters of Genesis, is confined to the "preparation of this globe for the reception of the human race." Besides, *these creations* are supposed to have been separated from each other by the wide chasm of "thousands of ages," as it regards their time; by the immense difference between a *single stratum of a few yards deep* round this *earth*, and the "*whole material universe*," as it regards their *amount*; and lastly, by the difference of the one being created in the beginning, immediately by the *agency of God*, out of nothing, and the other produced by a

“long series of operations” effected by “*secondary causes!!!*”

The sum of all this would seem to be that the last quotation from Mr. Buckland, merges itself in the *hypothesis* which we considered in the fourth chapter and is in fact a part of one of them: namely, of that “which supposes the word ‘beginning’ as applied by Moses in the first verse of the book of Genesis, to express an undefined period of time which was antecedent to the last great change that affected the surface of the earth, and to the creation of its present animal and vegetable inhabitants.” (Lect. p. 31.)

“The last great change” here mentioned means that *revolution* which preceded the *creation of man*, and which made way for “that creation.” That revolution destroyed all the former inhabitants of this globe and left it vacant for the “human race.” This can hardly be called another *hypothesis* by which to explain how geological revolutions may consist with the Mosaic narrative. All the point wherein *this* differs from what we discussed before appears to lie in this; namely;

That the “*beginning*,” in the first verse of Genesis, *includes* all the “*long series*” of revolutions which took place before the creation of man; even the “thousands of ages” which preceded it.

If however all the revolutions previous to man’s creation are included in the word “beginning,” the detail of creation must be, by this supposition, confined to the creation of the human race. This then is the same with the second hypothesis (in the fourth chapter,) only it clogs that hypothesis with this ad-

ditional difficulty ; namely that of making the “ BE-
GINNING” of creation to be five or six perhaps ten
times as long as the creation itself. For it supposes
the “ thousands of ages” to have occurred before the
Mosaic creation, and during the “beginning.” Those
“ thousands of ages” could not well be less than fifty
or sixty thousand years ; but the creation itself, since
man existed, cannot be much more than six thousand
years.—The sum then of the geological considerations
on this point, is,

1. *The first hypothesis supposes the six days to be
lengthened, and that Moses describes, in six long PE-
RIODS, all the revolutions which have taken place in the
earth since the foundation of the world.*

2. *The second hypothesis supposes the “ six days”
work of CREATION to be CONFINED to the “ PREPA-
RATION of this globe for the reception of the human
race.” Then*

3. This *second hypothesis* must likewise suppose
that there was a chasm or “ long series of revolutions”
between the “beginning” and man’s creation ; or else
it must, as above, lengthen the “ *beginning*” *itself* so
as to embrace that “ long series of revolutions which
Geologists suppose to have occurred since the first
beginning of creation and before the creation of man.—
The only difference seems to be in increasing the diffi-
culty by lengthening the word “beginning.”

The sum likewise of all our arguing hitherto is this,
namely ; that

1. *The first hypothesis*, if admitted, would not at all
answer the purpose of its invention. For if we alter
the “ days” into “ periods” of any length we please,

the *actual* state of the *strata* cannot possibly be brought into any correspondence with the *Mosaical* account of creation, either as to the number of revolutions, the order of the strata, or the character of the "fossil remains."—So that this hypothesis, without waiting for its destruction of the "Sabbath day" &c. is proved to be directly and positively *erroneous and untrue*.

2. That the *second hypothesis* makes the Mosaic *creation* to be next to *nothing*, nothing either as to *bulk* or *importance*.

Besides the extraordinary absurdity of merging our creation among the revolutions, and making *it* the result of "second causes."—And moreover, making either the "beginning" to extend for "thousands of ages" or else supposing "thousands of ages" to come in between the "beginning" of the *creation*, and the creation of man!!

The reader of the Bible, I believe, will be greatly surprised and alarmed, to hear it contended by Geologists and by geological *divines* too, that such sentiments are *not* "*dangerous to religion*:" and he will be still more alarmed when he finds what liberties must be taken with the Bible and with the christian faith, in order to make them consistent with either.

CHAPTER VI.

THE EFFECT OF GEOLOGY UPON THE SCRIPTURAL MEANING OF CREATION, AND THE UNIVERSAL BELIEF OF THE CHRISTIAN CHURCH.

IF we only bear in mind what we have before endeavoured to shew respecting the liberty which *Geology* takes with the *Bible*, we shall soon discover not merely their discordance, but that their discordance is of such an extensive and incurable nature that one or other of them must be overthrown. We have seen that the fancied agreements between the “*six days*” of creation, recorded by *Moses* and the *existing* situation of the *strata*, as recorded by Geologists, are absolute dreams ; and that it is utterly impossible that *Moses* can have intended his *narrative of creation* to be a *history* of those changes and revolutions which the geological Theory asserts to have taken place. But this disagreement will appear infinitely more demonstrable if we only survey with attention the scriptural account of creation.

The *second* method of accordance, by which the *Mosaic creation* is only made *one* creation amongst

many, will also stand out in striking colours before the Biblical student. If it shall appear that the Scriptures only recognize *one creation*, and *that* the Mosaic creation ;—if it appear that *that creation* was the *immediate work of God*, and that no “*second causes*” whatever could possibly have any connexion with *its production*,—if it shall be discovered that the *whole* of creation, the creation which the Bible recognizes, was brought into existence and order at “*the beginning* ;” that is, in the “*six Days*” of the Mosaic narrative of that event ;—we need not wish for more evidence upon the point, in the view of those who believe the Scriptures to be a correct and literal record of the creation.

The reader must however take notice that I do not say this for the sake of letting the matter rest upon *scriptural* evidence alone. I am assured upon the maturest reflection and the strongest philosophical evidence, that this pretended new Theory of Geology has no more claim to truth and consistency, than the absurd farrago of systems which have preceded it. And I scruple not to range M. *Cuvier's* and Mr. *Buckland's* scheme amongst those of which Mr. *Sumner* speaks in in the following words ;

“It may be safely affirmed, that no geological Theory has yet been proposed, which is not less reconcilable to ascertained facts and conflicting phenomena, than to the Mosaic history.” (Buck. Lec. p. 26.)

Leaving however the *philosophical* treatment of this subject for the present, perhaps we cannot now do better than turn our attention to the beginning of the *Bible*, which is also the beginning of this discussion.

INQUIRY INTO THE MEANING OF THE
WORD "BEGINNING."

"In the beginning God created the heaven and the earth." The "beginning" here must mean the commencement or origin of whatever the writer is treating upon as having had a beginning. The beginning of any thing means the origin of *that thing*. If the author be here writing about "*creation*" he must, (to be understood,) intend the "*beginning*" of *creation*. And he must intend the very first rise of the *whole creation*, if the whole creation be his *subject*. The subject of Moses, in his history of creation, expressly embraces, as he himself informs us, "the heavens, and the earth, the sea and all that in them is." Of the "heavens," he further specifies, the "*sun*," the "*moon*," and "the *stars*;" and in the second chapter, he recapitulates his principle objects, and adds, "Thus the heavens and the earth were finished, and all the host of them." And in the fourth verse he gives a sort of concluding summary, or final confirmation of the *correctness* and *entireness* of the *preceding history*. In that verse he says; "these are the generations of the heavens and of the earth when they were created, in the day that God made the earth and the heavens"

The *subjects* then of the "Mosaic history" which commence with the term "The *Beginning*," are the "*heavens* and the *earth*" with all their "*host*," and all their "*generations*" or races of animals, fishes, and vegetables, as *there* described.

THE WHOLE MATERIAL UNIVERSE, I presume, must be intended by the "heavens and the earth, and all that in them is;" as Moses subsequently, in the fourth commandment, expresses it. For if the "whole material universe" be not here implied when it is said God created the "heavens and the earth," it is nowhere implied in Scripture; because, though there is occasionally more specification in certain places, still it is the *same event*, which is described, and the *same history* of that event, which is every where recognised. Indeed Mr. *Buckland* himself expressly allows this; and assures us that the "Mosaic declaration" is, "that the whole material universe was created in the beginning by the Almighty;" and that Geology has nothing against this. (Lect. p. 24.)

OF OTHER SYSTEMS.

In order to obviate objections, I may here observe that I am aware some persons, and some commentators speak of "*other systems*" of created beings, concerning the circumstances of whose creation we cannot determine any thing from the "Mosaic narrative." To this I would say; I hardly know what is meant by "other systems." Are they systems of which the *Scriptures* speak? If *not*, how do we *know* that there are such systems, and why are they introduced? If they *are* spoken of in the Bible, are we to understand that the *Scriptures* speak of "other systems," which *Moses* does not include, and of which he says nothing in "*his history of creation*?" Are these "systems" implied in the following passages? "All things were

“made by him; and without him was not any thing
 “made that was made.” For by him were all things
 “created that are in heaven, and that are in earth,
 “visible and invisible, whether they be thrones or
 “dominions, or principalities or powers: all things were
 “created by him and for him.” (1 John, 3. Col. i, 16.)

If these supposed systems are not described or implied in such scriptures as the above, it is clear they are no where found in the word of God.—If however they be implied, what reason, I ask, have we for saying that those systems are not also implied in the words of Moses; “God created the heavens and “the earth”—“the heavens and the earth, and all the “host of them”—“the generations of the heavens and “of the earth”—“heaven and earth, the sea, and all “that in them is.” I hold it impossible for any reasonable man to *limit* the *extent* of *creation* implied in the *heavens, the earth, the sea, and ALL that in THEM is.* The “*all things made, that were made,*” of Saint *John*; as well as the “*all things visible and invisible*” of Saint *Paul*, though in different words to those used by *Moses*, certainly afford no evidence that they are more universal, or include more things than are in “heaven and earth, the sea and *all* that in them is.”

If however these “other systems” *are* included in the Scriptures and in the Mosaic narrative they are not “other systems,” but the same system, the identical and only system of *creation* which the word of God records or with which we are acquainted. Then the speaking of “other systems” whether material or immaterial, whether “visible or invisible;” whether nigh or

far off, is gratuitous, unmeaning, and useless.—And yet to remove every pretence for cavilling I would say, that if any persons imagine the possibility of other systems, I have nothing to argue upon against such fancies; only they must be confined by the two following limitations.

1. These systems, whatever they may be, must be shut out from being *any part* of the “*heavens and the earth, the sea, and all that is in them;*” whether they be “*visible or invisible,*” whether they be “*Thrones or dominions, or principalities, or powers:* because *all these* are mentioned by the apostles and in no sort *excluded* by Moses.

2. These systems, must be things with which the “*heavens and the earth &c. have no connexion* in the character of *origination* or *derivation*: so that the *one* was not derived from the other or made out of them, but came immediately from the hand of God, being created out of nothing.

With these restrictions, I am content about the supposition of “*other systems.*” For if we could suppose an indefinite number of systems, provided they were *collateral* and not successive, or successive only as to *time* and not *derivation*, my argument would stand exactly the same. It would apply with equal force to each. For if each were created immediately by God, and was not derived from any other created being preceding it, *to each system* there would be no *time* till its *own time*, and no “*beginning*” till its *own beginning.*” Every system then would stand precisely upon the same ground, and lie under the same circumstances, as if there were but *one system.*

As then we know nothing about the beings which God has created, except what he has told us in his word, it is evident that the *whole of creation*, of which we have any knowledge, is the subject of the Bible narrative, and the express business of Moses in the two first chapters of Genesis. *This* then is what Moses says, *God created in the "beginning."*—Hence the true nature of the "beginning," may be easily understood; and likewise the true nature of *creation*.

THE "BEGINNING," we shall now perceive, must mean the *first rise or origination of creation*. For if there were existences which *preceded* this creation, there was a "beginning" before this. Then this commencement could not be "*in the beginning.*" The Divine Being had no "beginning;" the term therefore cannot be applied to *him*. Every thing else had a beginning. The origin then of these existences was the beginning. Prior to that, if prior it may be called, there was nothing that began, therefore there was no "beginning." The idea rests exactly between God who had no "beginning," and the universe which had a beginning. Past eternity was swallowed up in God. There was no "beginning" therefore till the *world* began. This was the beginning of *time*. All which preceded was *eternity*. The creation of the world and the beginning of time was the same thing. This was properly "the beginning." There was no "beginning" before this. And in this emphatical and genuine sense, there is no "beginning" after it. "Beginning" as applied to the *creation* is the beginning of *time* or of *existence*, and is confined to it.

MEANING OF CREATION.

Creation is the work of God. It is called emphatically "His way." And the beginning of creation is called the "beginning of his way." The conduct and the works of man, are called the "way of man." And the beginning of his work would properly be the "beginning of his way." And thus I apprehend it is spoken of God, in the Bible. "The Lord possessed "me in the beginning of his way, before his works of "old." (Prov. 8. 22.) It is worth while to remark here the emphatical manner in which the formation of the "*earth*" the "*seas*" the "*mountains*," yea the "*habitable parts of the earth*," are connected with *this "beginning*;" as well as the "*heavens*" and the "clouds above." (verses 23—31.)

The *Psalmist* moreover in language nearly similar speaks of the *creation*, as God's "work of old." He "says; "of old hast thou laid the foundation of the "earth, and the heavens are the work of thine hands." (Ps. 102. 25.) The "work of old" was a work wrought in the *beginning* of creation. To this Saint Paul, in quoting the words of the Psalmist, bears a decided *testimony*. He observes, that God has given us "his Son, by whom also he made the worlds." what these worlds *are* and *when* made, he further informs us; "Thou Lord in the beginning hast laid the "foundation of the earth; and the heavens are the work "of thy hands." (Heb. 1. 2—10.)

Saint John likewise describes the *origin of things* when he speaks as Moses and Solomon, and Saint Paul do, of the “beginning.” “In the beginning “ was the Word, and the Word was with God and the “ word was God. The same was in the beginning “ with God. All things were made by Him and with- “ out him was not any thing made that was made.” “ He was in the world, and the world was made by “ him, and the world knew him not.”—(John 1. 1—3, 10.)

1. Here the “beginning” is clearly the beginning recognised by Moses, Solomon, and Saint Paul. Moses says, “In the beginning God created the heavens and the earth.” Solomon writes; “from the beginning when he prepared the heavens—when he appointed the foundations of the earth, “I was there.” St. Paul declares; “thou Lord in the beginning has laid the foundations of the earth.” And here his apostle John assures us; “in the beginning was the Word,” “all things were made by Him:” Which indeed is almost expressly saying in direct terms, and it is clearly his meaning; “in the *beginning*”—“*all things were made by him that were made.*”

2. From the very language itself, it is evident that the “CREATION” spoken of by Saint John and Saint Paul, is that very creation which is narrated by Moses, David, and Solomon. And I may add, nothing can be more express, emphatical, and satisfactory as to WHAT is intended by the *things* that were *created*. For Moses, the Psalmist, Solomon, and Saint Paul describe it under the same language “THE HEAVENS AND THE EARTH.” And Saint John very minutely

and emphatically assures us, that "ALL THINGS" *whatsoever*, "that were MADE," are designed to be implied in their language.—This language is doubtless intended as analogous to what we before quoted from Saint Paul. "By him were all things created that are " in heaven, and that are in earth, visible and invisible, " whether they be thrones, or dominions, or principalities, or powers; all things were created by him, " and for him."

Before we go any further it may be proper to observe,

First. That all we have seen from the Scriptures, respecting *creation*, clearly implies and means the *real origin* and *first production* of the whole *Bible CREATION*;—yea its absolute *creation out of NOTHING*.

Secondly. Mr. *Buckland* must mean the same, when he says, as before quoted, it is "*the Mosaic declaration, that the WHOLE MATERIAL UNIVERSE was " created in the "BEGINNING by the Almighty," and " that the MATTER of the universe is not eternal."* Certainly then, *this was all created out of nothing at the " beginning."*

Thirdly. Mr *Buckland*, when he distinguishes this "whole material universe" which he says was "created in the beginning by the Almighty," from "that creation which Moses records," (as Mr. *Sumner* writes,) and which Mr. *Buckland* himself calls, "the *preparation* of this globe for the reception of the human race," must be understood to mean that *that " preparation" of the earth for man was not a creating or making of the earth for man.* Yea that it was no *new original production* at all. For according to *Geology*

the whole earth was much the same as now, “thousands of ages before” man existed : and agreeably to Mr. Buckland, “the whole material universe was created by the Almighty” *in the beginning*. There would then be no “MATERIAL” to *create world* when man was made. The *earth* had long existed. It only needed to be put into a state of “PREPARATION” for “the human race.” This must be thoroughly borne in mind ; namely, that when the “*human race*” were formed, and all the animals in connexion with them,

1. *There was no part of the “MATERIAL universe,” then being created by the Almighty, THAT was “created in the beginning,” “thousands of ages before.”*

As the “*six days*” creation form the “*detail of the Mosaic narrative,*” and as that detail was *confined* to the “*preparation*” of the earth for man, those “*six days*” cannot belong to the “*beginning,*” nor to the *creation of the “material universe.”* This is perfectly clear : because the “*six days*” labour were “*confined*” to what was done at the creation of man, but the “*whole material universe was created*” “*thousands of ages*” before man ; namely, at “*the beginning.*”—The plain consequence then is,

—That MAN *had nothing to do with* “THE BEGINNING”—*nothing to do with* “CREATION.

—That *the “SIX DAYS” work made no part of* “THE CREATION.” “*The WHOLE MATERIAL UNIVERSE was created*” “*thousands of ages*” before : and

—The “SIX DAYS” were “*CONFINED to the PRE-*

PARATION *of this globe for the reception of the human race.*" But

We have seen, before, that *that* "preparation" was only one "revolution," and one formation, or stratum; or some such thing: a mere wash, or change upon the surface of the earth alone.

2. Our second remark is, That the *heavens and heavenly bodies, including sun, moon, and stars*, yea and our *atmosphere* also, which is sometimes called the heavens, *could not* have any thing whatever to do with "*the preparation of this globe for the reception of the human race;*" and nothing therefore whatever to do with "*that creation which Moses records, and of which Adam and Eve were the first inhabitants.*"

This is perfectly certain. For.

(1.) The *heavens* were a part of the "material universe, which was created in the beginning by the Almighty; and that beginning was "thousands of ages" before man. Therefore the *heavens* existed thousands of ages before man.

(2.) Even our *atmosphere*, which is sometimes called the "heavens", must have been created "thousands of ages" before man; because according to Geology "this globe" contained "*fishes, animals, and birds*" "thousands of ages" before the human race existed; and *none of these* could subsist without the *atmosphere*.—The "HEAVENS" therefore in their most extended meaning, could not possibly be any way concerned with or affected by those "*operations*" *on the surface of our globe which prepared the EARTH for the "reception of the human race,"* any more than

those "heavens" could be re-modelled and re-created at our "deluge," and by its operations.

These two events then, (viz. *the beginning* of the world, and the creation of *man*,) so distant and dissimilar, cannot possibly interfere or mingle with each other either in geological estimation, or in Biblical description. Therefore

1. "*The CREATION of the HEAVENS and the EARTH which belongs only to the 'BEGINNING' cannot MINGLE with the PREPARATION of this globe for the reception of the human race,*" which was an event that occurred "*thousands of ages*" after the creation of heaven and earth.

2. *The formation of man and the "PREPARATION of this globe for his reception," cannot mingle with the NARRATIVE of the "creation of heaven and earth;"* Indeed, neither the *subjects* nor the *narratives* can possibly unite!—That is to say, the BIBLE cannot make these *two* events *one*, or treat them as such.

This, I repeat, is *impossible*. For no correct historian can make *coincident*, in point of *time*, events which were "thousands of ages" distant: nor those results *similar*, which differ from each other, more than the rough-casting of a castle would differ, from the making of the materials and erecting the fortress.

The careful reader will by this time perceive that it is quite impossible for the *Bible* and *Geology* to stand together. For instead of the Scriptures never mingling the above events, which according to the Theory we are considering they could not, they most demonstrably mingle those events from one end of the Bible

to the other. And, what is most remarkable, the Sacred Writers *never distinguish* those events under any circumstances whatever!¹—Mr. Faber was unquestionably right in his views of this subject, conveyed in the following language:

“ Two distinct acts, then, are ascribed to God : the
 “ one, *the act of Creation properly so called*, by which
 “ the materials of the universe were produced out of
 “ nothing ; the other, *the act of formation out of the*
 “ *previously created materials* ; which act of forma-
 “ tion is said to have continued operating through six
 “ successive days.

“ Now I will venture to assert, that any person
 “ perusing the Mosaic narrative, and at the same time
 “ bearing in his mind the two distinct acts of *creation*
 “ and *formation*, will clearly perceive, that the theory
 “ of *an organization or formation of crude matter*
 “ ANTECEDENT to the first of the six days, is not
 “ only unauthorized by the scriptural history, but is
 “ altogether contradictory to it.” (1 vol, p. 158.)

Nothing, certainly, can be more evident than that Moses includes the whole creation in the *six days* : the heavens, and all they contain, in conjunction with the earth and sea with all *they* contain. For after

¹ We do not pronounce this universal negative respecting the *Scriptures* as Geologists do respecting the *earth*. They examine the *surface* chiefly of a few rocks or strata, and then not finding certain fossils therein, rashly declare that the *Globe* does not contain them. While it is manifest they have not examined a ten thousandth part of it, and never can. But the *Scriptures* are perfectly open to our view ; and by a careful investigation, not of a *few verses* here and there, but of the *whole*, we are perfectly authorized respecting so remarkable a fact, to assert what it does *not* contain as indubitably as what it does contain.

having specified the particular operations of *each* day and having recorded the making of the heavenly bodies as the work of *one* of *those* days, he says; “thus the heavens and the earth were finished and all the host of them.” And further still, he most minutely specifies what had been done by the Almighty at *that very juncture* and point of time. “These are the “generations of the heavens, and of the earth, when “they were created, in the day that the Lord God “made the earth and the heavens.”—Here Moses describes the *objects*, “the earth and the heaven;”—and then *links together* the earth and heavens, in the *same* period of formation; “*when* they were created, “*in the day* that the Lord God made the *earth* AND “*the heavens.*” (Gen. ii. 1, 4.)

Not content with this, he further demonstrates the *identity* of the *whole creation* as produced in these *six days*, by telling us very minutely, “And on the “*seventh day* God ended his work which he had “made; and he rested on the seventh day from *all* his “work which he had made. And God blessed the “seventh day and sanctified it: because that in it He “had rested from *all his work which God created* and “*made.*”

Again, two thousand five hundred years after the creation, this same accurate author thus describes the same grand event of creation in six days. “In six “days the Lord made heaven and earth, the sea and “all that in them is, and rested on the seventh day.” And even with still greater emphasis and particularity, the same Moses tells us;

“And the Lord spake unto Moses saying,”

“Ye shall keep the sabbath therefore; for it is holy unto you—six days may work be done; but in the seventh day is a sabbath of rest—for in six days the Lord made heaven and earth, and on the seventh day he rested and was refreshed.”

“And he gave unto Moses, when he had made an end of communing with him upon mount Sinai, two tables of testimony, tables of stone, WRITTEN WITH THE FINGER OF GOD.”

These “*two tables of stone*,” containing the *ten* commandments, (of which this, the *fourth*, is among the most minute and specific of the whole, and the most singularly minute, particular, and exact revelation of all the will of God,) are the *only parts* of divine record which God himself is said to have *written with his own hand*.—I shall make two or three remarks on this narrative.

1. It is impossible that *God* should *himself* have recorded with his *own hand*, a description of the “*heaven and earth, the sea, and all that in them is*” as having created them in “*six days*,” if that record were not *strictly* and *literally* correct. Yet if *Geology* be true, there is no part of this correct. For “MADE” in the fourth command, is certainly analogous to and descriptive of the same “*heavens and earth and sea*,” which in ii. Genesis, are said to be “CREATED AND MADE.” But *Geology* says; that the “*heavens, the EARTH, and the SEA*” especially, were created and made, “*thousands of ages*” before the work of those “*six days*” commenced!!

2. The *second commandment*, taken in connection with the commentary of Moses upon it in the fourth

chapter of Deuteronomy, seems most clearly to *demonstrate* that by the “*heavens, the earth, and the sea,*” with *all that they* contain, the *Scriptures* mean us to understand *all created existence whatever*, of which we have obtained any knowledge, or, by whatever means, whether by revelation, information, or philosophy, we can obtain any knowledge. *That commandment* certainly intends to *exclude* from the objects of *worship*,
 EVERY CREATED BEING.

That the *prohibition* extends to *all creation*, is certain from the very nature of the command, and which it would be *idolatry* to transgress. And yet it is equally certain that this *universal* idea is expressed in the language, and only in the language, by which the *Scriptures* commonly describe “the *heavens, and the earth, the sea, and all that in them is.*” And that *no object* of worship is forbidden but the *heavens, and the earth, and such beings* as are found *in them*.

“Thou shall not make unto thee any graven image, or any likeness of *any thing that is in HEAVEN above, or in the EARTH beneath, or that is in the WATER under the earth.*”—This is the *text*.

The *comment* of Moses upon it, as above stated, expressly implies that the *heavenly bodies themselves, and all their created inhabitants*, are included under this common scriptural language of the “*heavens and the earth, &c.*” as used in the *second* and in the *fourth* commandments. After excepting against *every created thing* in the *earth, the air, and the sea*, he adds respecting the *heavens*,

“Lest thou lift up thine eyes unto *heaven*, and when thou seest the *sun, and the moon, and the stars*, even

“*all the host of heaven* shouldst be driven to worship them and serve them.” Observe here,

(1.) *No object is forbidden* but what is contained in the *heaven, the earth, and the sea,*

(2.) But yet the *whole created universe* is forbidden.
Then

(3.) The *heaven, the earth, and the sea,* comprize the *whole created universe.*

Nothing can possibly be plainer than this. In the language of Scripture, The “*heavens, and the earth, and the sea,*” mean ALL CREATION.

Here then we have an *infallible key* to the Scripture language generally, and to the *fourth* command in particular. For no law of just interpretation will allow us for a moment to contend that

“The *heavens* and the *earth, the sea, and all that in them is,*” of the fourth commandment are less extensive or include less objects than

The “*heaven* above, the *earth* beneath, and the *water* under the earth,” of the *second*.—Indeed the language in its meaning is clearly *identical* in both places. For the “*waters beneath the earth,*” certainly mean the ‘*sea.*’^m

It is now therefore most demonstrably certain that we are bound to understand these words “*In six days the Lord made heaven and earth, the sea and all that in them is,*” *literally*; and that they include the *whole universe.*

^m If I should hereafter endeavour to shew that there are *waters in the earth* over and above what the *sea* contains, I shall not go beyond the plain meaning and language of Moses. For water *in the earth* will still be either the *earth* or the *sea* or something *in them.*

I would, however, observe, that as my main and express object respects *Geology* alone, I wish to exclude every cavil arising from any other quarter. As, moreover, the *angelic beings*, will hereafter form a separate consideration; I wish notwithstanding the clear bearing of this second commandment towards *them*, to observe that *my end* is answered though the meaning of the *fourth* commandment be confined, in the language of Mr. Buckland, to

“*The whole material universe.*” And certainly language has *no meaning* if it do not comprehend *that*.—But

3. Both these passages (in Gen. ii. 1—4 and Ex. xx, 31.) apply with equal force against *both* (and indeed all) “*hypotheses*” of geological accommodation. They apply against *every evasion* resorted to by Mr. *Faber* or Mr. *Buckland*, or Mr. *Sumner*. No possible sophistry can exclude “*the whole material universe*” from being comprized in these “*six days*” labour which express the *creation*, of the “*heavens and the earth, the sea, and all that in them is.*” And no possible sophistry can elude the fact, that these “*six days*” are six real days—such as the “*sabbath day.*” And lastly; It is equally impossible to exclude the “*human race*” from being created in *these same six days*, for it is most expressly and particularly named and described as being created in them.

I had indeed written a great deal upon numerous passages of holy writ, endeavouring to shew how extensively the word of God is affected by this Geo-

logical Theory, and how, directly or indirectly, many parts both of the old and new Testament bear against the *nature* of that *creation* as effected by "*second causes*," which Geology would force upon the Bible. But I feel it quite unnecessary and useless to enlarge. For if any persons are so bewitched by this new Geology as to evade the force of the preceding discussion, and explain away the plain meaning of the Scriptures already adduced, any further argument would, to such persons, be doubtless in vain. And to unprejudiced persons, they will be unnecessary. I may however remark two things.

1. I would observe, that the Scriptures expressly connect *man* with the "*beginning of creation*."

"For then shall be great tribulation (to the human race)-such as was not since the '*beginning of the world*' to this time, no, nor ever shall be."

"For in those days shall be affliction, such as was not from the *beginning of the creation* which God created unto this time, neither shall be."

"Where is the promise of his coming? for since the fathers fell asleep, all things continue as they were from the *beginning of the creation*." (2. Peter iii. 4.)

Only *two* reasons, I think, can be assigned for thus placing the "*human race*" in connexion with "*the BEGINNING of the CREATION*."

The *first* is, that *man* was *really* created, as the Bible represents the matter, *at the beginning*. So that the *creation* of the *world*, and the *creation* of the *human race* are co-incident.

The *second* reason, which amounts to the same thing, is this; namely, that the creation of the "*hu-*

man race” was an *event so important* that every thing else on earth was nothing compared with it; and that, in fact, this globe was *actually created for man’s accommodation*.

Agreeably with this idea, we find the Prophet Isaiah speaking in the name of Jehovah, thus ;

“I am the Lord and there is none else, there is no God beside me.” “I have made the earth and created man upon it: I even my hands, have stretched out the heavens, and all their host have I commanded.” “Thus saith the Lord that created the heavens; God himself that formed the earth and made it; he hath established it, he created it not in vain, he formed it to be inhabited: I am the Lord, and there is none else.” “Thus saith the Lord—I am the Lord that maketh all things; that stretcheth forth the heavens alone; that spreadeth abroad the earth by myself.” (Isaiah xlv. 5, 12, 18.—xliv. 24.)

’Tis obvious to remark here, that as *God “created”* the “*earth*” “*not in vain,*” but “*formed it to be inhabited*” we cannot interpret this to mean only that the *all-wise* and *all-powerful God*, has employed his infinite wisdom, and almighty power for “*thousands of ages*” to prepare the earth for man in these “*latter days.*” These “*thousands of ages,*” these numerous labours and abortive births, these almost endless struggles and throws, to effect an event so desirable, might doubtless well consist with *irrational* agency arising from “*physical and chemical causes,*” but to attribute such procedure to the “*only wise God,*” is little better than *charging* “*God foolishly.*”

The *manner*, moreover, in which the Almighty

speaks of “stretching forth the heavens *alone*,” and “spreading abroad the earth *by himself*,” with numerous other passages of the same character, such as the following; “I am he; I am the first, I also am the last. “Mine hand also hath laid the foundation of the earth, “and my right hand hath spanned the heavens: when “I call unto them, they stand up together.” “By “the word of the Lord were the heavens made, and “all the host of them by the breath of his mouth.”^m The manner of these operations, I repeat, precludes the extraordinary supposition that *all the events* preparatory to *man’s* reception, and subsequent to the first creation, were brought about by “*secondary causes*.” The Scriptures unquestionably shut out all “*secondary causes*” from *every work of creation*.

2. I would observe in the second place, that the “*heavens and the earth*” are always made *synchronous* in the *Bible*, both as to their *creation* and their *destruction*.

“Of old hast thou laid the foundation of the *earth* “and the *heavens* are the works of thy hands.” “They shall perish but thou shalt endure; yea they “all shall wax old as doth a garment.”ⁿ

“Lift up your eyes to *heaven*, and look upon the “*earth* beneath; for the *heavens* shall vanish away like “smoke and the *earth* shall wax old like a garment.”^o

“And I saw a great white throne and him that sat “on it, from whose face the *earth* and the *heavens* fled “away, and there was found no *place* for *them*.”^p

“And I saw a new heaven and a new earth; for the

^m Isaiah xlviii. 12, 13. Psalm xxxiii. 6

ⁿ Psalm x. 2. xxv. 6.

^o Isaiah li. 6.

^p Rev. xx. 11. xxi. 1;

“*first heaven* and the *first earth* were passed away ;
“and there was no more *sea*.”^a

“*Heaven* and *earth* shall pass away.”^r

“Thou Lord in the beginning hast laid the founda-
“tion of the *earth* ; and the *heavens* are the work of
“thy hands.” “They shall perish, &c.”

“By the word of God the *heavens* were of *old*, and
“the *earth* standing out of the water and in the water ;
“whereby the world that *then* was (viz. the *old world*,
“for God spared not the old world but saved Noah,”)
“being overflowed with water, perished. “But the
“*heavens* and the *earth* which are *now*, by the same
“word are kept in store, reserved unto *fire* against the
“day of judgment and perdition of ungodly men.”
(2 Peter iii. 5, 7.)

It is minutely stated here that the “old world,” or
the inhabitants before the *flood*, were destroyed for
their sin. And the destruction of the world, the
heavens and the *earth* by *fire* will be preparatory to
the *general judgment* : all depending upon the moral
state of their inhabitants.

(1.) Thus the *heavens* and the *earth* will *perish*
together.

(2.) They are preserved by the same “*word*,” and
power.

(3.) They are *always united* in the Scripture account
of *creation*, and it is never once hinted that they were
separately created or made ; which they must have been
if the EARTH *was made for* MAN, and the HEAVENS
“*thousands of ages*” *before him*.

That the *earth* which is *inhabited by man*, was not

^a Matt. xxiv. 31.

^r Heb. i. 10.

made out of a prior world, is perfectly decided by Saint *Paul*, when he says ;

“ Through faith we understand that the worlds were “ framed by the word of God, so that things which are “ seen were not made of things which do appear.”

Then certainly the world which we now see, was not made from the “ wreck and ruins of one more ancient,” as Mr. Buckland has it ; for *that* was as *visible* as *this* ; but it was *created out of nothing*.

As then the Scriptures every where unite the “*earth and heavens*” in their *creation*, their *sustentation*, and their *final issue*, does it not seem not only gratuitous, but very bold to invent ways of evading their plainest dictates !

SENTIMENTS OF THE CHRISTIAN CHURCH.

I have thought it right, with Bishop Pearson, to call this the sentiment of the “*christian church*.” To prevent objection however, I admit, that several eminent individuals, both Fathers and Moderns, have *suggested*, (not perhaps steadfastly and consistently *maintained*,) an idea that what is called *our system only*, may be the subject of *Moses* in his history of *creation*. But they never for a moment admitted what Geology now claims at our hands, that the *Mosaic creation* of the earth in six days is only a new modification of our globe, a mere “*preparation*” of it “ for the reception of the human race.”

I have mentioned in connexion with the *scriptural* view of creation, that the *geological* notion respecting “*formations*” is quite a *new* notion in the *christian church*, and that it introduces an entirely different view

of *creation* to that which has ever been held from the Bible, in the church of God. Indeed it is only the revival of the old heathenish and atheistic notion of an “infinite series” of revolutions in the matter of the universe, but is no real *creation*, of it.—On this subject I shall be very brief, and only introduce a few sentences relative to this matter from Bp. Pearson.—That profound scholar and eminent divine, writes ;

“ I suppose it cannot be denied as the sense of the *creed* that under the terms of *heaven and earth* are comprehended all things ; because the first rules of faith did so express it—*the maker of things visible and invisible*.

“ And well may this be taken as the undoubted sense of the *creed* because it is the known language of the sacred Scriptures. *In six days*, saith *Moses*, *the Lord made heaven and earth* : in the same time saith God himself, *the Lord made heaven earth, the sea, and all that in them is*. So that all things by those two must be understood which are contained in them : and we know of no being which is made or placed without them.”

“ The ancient Hebrews seem to have had no word in use among them which singly of itself did signify the world, as the Greeks had,—and therefore they used in conjunction *the heaven and the earth* as the grand extremities within which all things are contained. Nor do the Hebrews only use this manner of expression, but even the *Greeks* themselves ; and that not only before but after *Pythagoras* had accustomed them to one name. As therefore under one single name of world or universe, so also under the

“ conjunctive expression of *heaven and earth*, are contained all things material and immaterial, visible and invisible.” (on the Creed, 47, 48.)

“ Now when we thus describe the nature of creation, and under the name of *heaven and earth* comprehend all things contained in them, we must distinguish between things created. For some were made immediately out of nothing, by a proper, some only mediately, as out of something formerly made out of nothing, by an improper creation. By the first were made all immaterial substances, all the orders of angels, and the souls of men, the heavens and the simple or elemental bodies, as the earth, the water and the air. *In the beginning God created the heaven and the earth*; so *in the beginning*, as without any pre-existing matter: this earth, when so made was without form and void.—By the second all the *hosts of the earth*, the fowls of the air, and fishes of the sea.” (p. 55.)

“ It remaineth then that we stedfastly believe, not only that the *heavens and earth and all the host of them* were made, and so acknowledge a creation, or an actual and immediate dependence of all things upon God: but also that *all things were created by the hand of God, in the same manner, and at the same time, which are delivered to us in the book of Moses by the spirit of God*, and so acknowledge a novelty, or no long existence of the creature.” (p. 62.)

We see, then that Geology is most portentous indeed, in its bearing upon the *word of God*, as universally understood by the wisest and best of men. If this *novel*

science be admitted as a thing established beyond contradiction, it is demonstrable that the *divine record* will be thereby *shattered* from *Genesis to Revelation!*

OBJECTION.

If any persons should object to the preceding conclusion and say, that ASTRONOMY shews, from the immense distance of some of the *nebulous appearances* in the heavens whose *light* would be a prodigiously longer time than man has been upon the earth, in arriving at us, that some other systems must needs have been created many thousands or perhaps millions of years before the "human race" existed: I would briefly say to this that if *astronomers* would make out a "*Theory of creation*" from *these appearances*, as *Geologists* have done from the *appearance* of the *strata*, I feel little doubt but they would be as easily answered.—On the above objection I shall only make two remarks.

1. That astronomers, as well as Geologists, have no *fixed and steady data* from which to calculate the *distances* of those bodies of which they speak; and therefore vary from one another infinitely too much in their *conjectures* respecting their distances, to build any opinion upon relative *to the time of their creation*.

2. The *nature of the transmission of light*, is vastly too *subtle* and too little known to enable us to establish, from the *time* of its progress, any conclusions contrary to the plain information of Scripture.

(1.) If Dr. Herschel be right in supposing the body of the *sun* to be *opaque* and his *atmosphere* only, *lumi-*

nous, philosophers have been greatly in *error* in supposing the sun to be a globe of *fire*.

(2.) It seems impossible that a *luminous atmosphere* can be *itself* the *source of light*; can unceasingly *send off* streams of light, and not be *diminished*.

(3.) Can any one believe that light is *matter actually* darting *into the eye* at the rate of a dozen millions of miles *in a minute*, and yet causing health and pleasure instead of pain and instant death!

(4.) Light, in matter thus transmitted, would be a mystery the greatest of all mysteries, except that of the Author of it.

(5.) I pretend not to object to the conclusions arising from the eclipsing of Jupiter's satellites. But I do say that the *doctrine itself* is infinitely too mysterious, and liable to too many objections, to be the foundation of a Theory, and the source of objection to the obvious instruction of the word of God.

(6.) Once more. It is a principle, moreover, in this "Theory of light," that the *light* never returns. But to suppose that light has been for "millions of years" emitted from a body without being diminished, is to suppose its source infinite. And to say here that the subtlety and attenuity of light is such that if it issue from a body for "two millions of years," it will cause no diminution in the brightness, is only admitting in other words that *light* is not caused by a *transmission of matter*. For if it were, it would necessarily diminish, and probably the sun, in much less than "two millions of years," would be nearly useless to us, if not invisible.

CHAPTER VII.

HISTORY OF CREATION.

GEN. i. 1 "In the beginning God created the heaven and the earth."

"The beginning," as we have already seen, means "the beginning of *creation*, and applies to what even "is included in the subsequent narrative of the "*six* "days."

"*The heaven and the earth*," as we have before shewn, mean all the *universe*.

"*Created*" here evidently means produced out of nothing. This, I presume will not be denied after what has been said respecting Mr. Buckland's declaration that Moses speaks of the "whole universe as created in the beginning by the Almighty."

There are two points relative to creation concerning which the narrative does not explicitly inform us, and which therefore of course, I cannot pretend confidently to decide, and need not largely examine. The point are the following; namely, whether the whole *matter* of the universe was created *at once*, or at *successive* periods, during the six days: and whether, if it were

created at once, it were in one "*chaotic mass*," or in the *individual bodies* which are afterward described.

1. *Whether the whole universe were created at once, in the first instant, out of nothing.*

I am not aware that any thing should lead us to suppose there might be a *succession* of creating acts in the six days, unless what is said about the sun and moon, as being made on the "fourth day." But probably that does not mean created, as to the *matter of them*, as will be noticed under a consideration of that part of the subject. There appears to be something sublimely grand and magnificent in the thought that the "*whole universe*" started into being in an instant, at the will and pleasure of the most High, and not by successive acts of the great Creator's will; and there is nothing opposed to this idea in the word of God.—There seems moreover to be a feeling arising in the mind from the comparative magnitude of the earth and heavenly bodies, a little objectionable to the notion that the *earth* had precedence in the time of creation. This however is only theoretical; besides, the "Son of God" was one day to distinguish this part of creation by dwelling on the earth.

Upon the whole, I feel inclined to believe that the sacred narrative would lead us to view the *earth and heavenly bodies* as created in one and the *same instant*, by the fiat of the Almighty, and that the first words of Genesis, "In the beginning God created the heaven [heavens] and the earth," seem most properly to imply as much. I do not however mean to contend that the phrase "in the beginning" necessarily proves this; or that the same language when applied to the *crea-*

tion, does not in other parts of Scripture, include the *sixth* day, and not merely the *beginning* of the "six days."

2. *Whether, admitting the universe to have been created at once, it was created in one chaotic mass.*

I feel the most decided conviction that there is no proof in Scripture of an *universal* chaos.

The 2 v. of 1 ch. of Genesis, the only evidence I recollect to have been drawn from the sacred records, seems to me clearly to imply no such thing; "And the earth was without form and void." Whatever the words "without form and void" may mean, which will be noticed in its place, the whole verse is very plainly referable to the "*earth*" viz. *our globe*—and is *confined* to it.^s The conjunction, translated, "and," (but which Tremellius and Junius seem rightly to have rendered "*autem*," "*terra autem erat*,") cannot I hope be supposed sufficient to connect the *second* verse with the *first*, and make "*earth*" in the one mean the same as "*heaven and earth*" in the other, and both mean an "*universal chaos*."

Whatever truth there may be in the doctrine of an "universal chaos" in the beginning of creation, that doctrine cannot in any fairness derive countenance from what is said relative to the "*earth*" in the second verse; for what is there said was not of the "*earth*" when it was merged in the universal chaos,

^s "*Confined to it.*" If we even suppose the heavenly bodies to have gone through the same sort of process as the earth is here stated to have gone through, it is *only a supposition*, and we have no right to make *application* of the word further than the sacred historian himself warrants us. But even then it will not enable us to establish any thing about an "universal chaos."

but, if there were such a thing, after it was extracted from it. To say that "*earth*" here means the *matter* of the earth *with* the heavens, in one general mass, is perfectly arbitrary and gratuitous.—It contradicts moreover, as will be seen in course, the strain of the whole narrative.

If it be inquired of me, what was the situation of the heavenly bodies between the first day in which they were supposed to be created, and the fourth in which they are again introduced into the narrative? I cannot answer that question, because the sacred historian has not answered it.—The process, so far as the divine penman enables us to trace it, seems to be something like the following:—

1. If we are to suppose (for it is mere supposition) an universal chaos, it is plain that the "*earth*" was separated from the common mass, on the "*first day*", and that "*light*" was formed about it on the "*first day*"; but that the heavenly bodies do not appear to have been separately and individually arranged till the "*fourth day*."

2. If we conceive that the heavenly bodies as well as the earth, were all created at once at "the beginning" of the first of the six days, but in their individual and separate capacities; we may, from analogy, further suppose, that those bodies might possibly go through a process somewhat similar to that of the earth, during the first three days; but that they did not finally receive their arrangement, their relative situation, and their influential and regular motions, till the "*fourth day*".

The circumstance, that the heavenly bodies were

“ set in the firmament of heaven,” seems also to imply that they were not *so* placed on the “*first day*.” For the “*firmament*”, whatever that may mean, was not created till the “*second day*”. And those bodies could not be “ set in the firmament of heaven” before that firmament had existence.

V. 2. “ And (or rather *but*) the earth was without form and void, and darkness was upon the face of the deep; and the Spirit of God moved upon the face of the waters.”

“ *The face of the deep*,” or of the *abyss*, doubtless means the same as the “*face of the waters*.”

The “*waters*” or the “*abyss*,” I understand to be waters *surrounding* our globe, and not an interminable and unfathomable mass of waters holding the *universe* or our earth in *suspension*, much less in *solution*. That most unphilosophical and unnatural notion will in due course, be more fully examined.

“ Darkness was upon the face of the deep.” If “*light*” be either *material*, or depend upon matter for its action or utility, it is plain that *before* that upon which light depends was developed, every created thing which could consist without light would necessarily be involved in darkness. And if light necessarily required the Divine power for its production, as the next verse implies, it is certain that *darkness* could not require it; because previous to the production of *light* it must of *necessity* have been *dark*. For if it had not been dark, it must have been *light*. Then light would have been before it was, which is absurd.

“ *The earth*.” This clearly indicates *our globe* and not an universal mass of chaos. For it is here con-

nected with the following *history* which describes the various stages of its progress to the consummation. If we allow “*earth*” here to mean the “universal chaos,” we shall ruin the character of the narrative; for though various operations upon this “*earth*,” as separate and alone, are previously recorded of it, we should have no authority to apply those operations to the “*earth*,” for except *here*, it is not introduced till we come to the fifteenth verse; and there it is only mentioned incidentally, and distinguished from the heavenly bodies.—As I conceive the *first* verse to include and briefly to describe the *whole* creation, so I consider this second verse to commence the *particular process* by which the *earth* was brought to maturity.

“Without form and void.” This cannot mean that the earth possessed no shape at all. It probably was *created* in its present *spheroidal* “*form*.” But as the waters appear to have surrounded the earth, and covered it all over, we must conceive that our mountains and seas were either not then in being, or, which seems most probable, that there was a sufficient quantity of water to fill the seas, and also to cover the mountains; and that these waters, when “divided,” were partly taken up into the atmosphere, partly confined to the bowels of the earth, and partly fixed in the seas.—“*Void*,” seems only to relate to the *surface* of the globe, as being one uniform covering of water, without *trees, plants, or animals*.

Indeed it might rather seem that the words “*without form and void*,” both relate solely to the *surface* of the earth, and neither to an *universal* chaos at all, nor to any thing like a chaos, in the usual sense of that word.

There is indeed no evidence that they relate to any substantial part of the *shape* or *figure* of our globe. The state of the globe to which these words—"without form and void,"—relate, would perhaps be very properly designated by rendering the clause thus: "*But the earth was desolate and empty;*" which seems indeed the true import of the language. The earth was a wide *waste*. It was destitute of *appearance*. There were neither hills, valleys, nor mountains, to be *seen*. It was *void* or *unstored*: it was furnished with no *forests*, it was garnished with no *vegetables*, it was inhabited by no *living beings*.

The *Prophet Jeremiah* uses this very language when applied to the *desolations of Judea*, where nothing like a geological chaotic mass could possibly be included in his meaning. "I beheld the earth, and lo it was *without form and void.*"^t (ch. iv. 23.)

"And the Spirit of God moved upon the face of the waters."

"Moved" means *brooded*, as fowls do to hatch their eggs, or cherish their young. Which idea, whether

^t "*Form and void.*" I hope we before most satisfactorily proved that the *state of the earth* indicated by the words "*without form and void,*" cannot possibly be *accommodated* to meet the requirements of the *modern geological Theory*. I admit that the state of the earth when "*without form and void,*" was (in my opinion) in all *substantial* parts, exactly what it was when covered by the waters of the *Deluge*, and as it must be supposed to have been after nearly all the geological "*Revolutions,*" as we have also shewn; but then, on their principles, one of two things must follow:

1. Either all those revolutions must have occurred, and all the *animals* involved in them, *lived*, for "thousands of ages," without *light*, without *air*, and consequently without *vegetables*; or else,

2. *This narrative of Creation is worse than nothing, and only calculated to beguile and mislead us!!*

we can comprehend the nature of that *preliminary character of vitality* which is implied in this operation, or not, it clearly cuts off, I most confidently believe, that extravagant notion that our “*earth*” and “*seas*” had possessed *fishes, birds, and animals*, “*thousands of ages*” *before* the “*Spirit of God moved,*” as it is here stated, “*upon the face of the deep.*” The “*Spirit of God*” cannot here mean “*wind*”; for there was *no atmosphere* yet in being.

V. 3—5. “*And God said, Let there be light, and there was light. And God saw the light that it was good: And God divided the light from the darkness. And God called the light day, and the darkness he called night. And the evening and the morning were the first day.*”

1. I would here remark in the first place; nothing can more strongly indicate that this declaration, “*Let there BE light,*” was the *first production* of light, than the sublime magnificence and divine simplicity of the language. It is not said let light be *here* or be *there*. But, Let there *be light*; or let *light exist*. This is fully intimated too, by its being said, “*God saw the light that IT WAS GOOD.*” Which would be perfectly ridiculous, had a mist now for the *first* time after “*thousands of ages*” of darkness, dispersed and let in light upon the earth from the sun. Besides, it is only one out of countless numbers of the insuperable difficulties to which this Geology is reduced, to suppose that *fishes, birds, and beasts*, feeding upon vegetables and animals, could have existed “*thousands of ages*” *without* “*light.*”

2. Hence we see how the “*days*” were first

established, and why called "days". Much opposition, and even from *learned men*, has been raised against the possibility of the *three* first days of *creation* being "*natural days*"; which it is said they could not be before the *sun*, (which is the natural cause of our day,) was created, and *that* took place on the "*fourth day*." But this obviously appears to be a mistake; and supposes, what, from this verse they ought to have known to be untrue; namely, that the *sun* was *originally* to the earth, the regulator of day and night.

Now it is manifest that "*light*" was, from the beginning, "*divided from the darkness*." And this division of *light from the darkness*, made "*day and night*," precisely as it does *now*. "*And God called the light day, and the darkness He called night*." And they have been so called ever since. Now as "*light*" was "*divided from the darkness*," it is quite demonstrable that the *earth* might, by exactly the same revolution round its axis which it now performs, obtain just the same *succession* of *light* and *darkness*.

It is equally certain that our natural *day* is caused by one revolution of the earth round its axis, and by its receiving one succession of "*light and darkness*," and not by the accidental circumstance of that "*light*" being derived from a particular body, viz: the sun. It is perfectly clear that the earth might receive light and darkness with as much correctness before the light was fixed in the sun, as after it. And therefore it is evident that a "*natural day*," obtained by the earth's revolution round its axis, and by its receiving "*light*

and *darkness*” in succession, was perfectly competent *from the beginning*.

V. 6—8. “And God said let there be a firmament “in the midst of the waters, and let it divide the “waters from the waters. And God made the firmament, and divided the waters which were under “the firmament from the waters which were above the “firmament: and it was so. And God called the “firmament heaven. And the evening and the morning were the second day.”

1. I may observe; That the aerial regions seem here to be called, as in other parts of Scripture, the “heavens,” under the term firmament. I do not know what the “waters above” and the “waters below” the “firmament” can mean, more than the vapour taken up into the atmosphere, and the waters left remaining in the abyss surrounding our globe.

2. As the firmament here, whatever it may embrace beside, seems plainly to mean our atmosphere, it would be perfectly absurd to suppose that “GOD” would *say this*, had this process been performed very long before. And it is equally absurd to suppose that *vegetables* could grow and animals live for “thousands of ages” *without an atmosphere*. Yea and even without light also.

It is not less difficult to conceive how any thing in the character of a “*mist*”, as before alluded to, could obscure the sun from the earth, or even *exist* without an *atmosphere*.—So clogged with difficulties and absurdities, in every direction, is that system which strives to evade the plain and obvious meaning of the word of the Most High!

V. 9, 10. " And God said let the waters under the heavens be gathered together unto one place, and let the dry land appear ; and it was so. And God called the dry land earth ; and the gathering together of the waters called he seas : and God saw that it was good."

1. I would here also observe ; that it would be perfect nonsense in the divine writer to say all this of God and of his work, with such peculiar dignity and emphasis, as manifestly a *first* production of its kind, had this same separation of land and water been effected a dozen or perhaps twenty times *before*. But it is the peculiar characteristic of this Geology to believe any thing but the Bible.

2. As the Scriptural narrative is not very explicit on this subject, I am not allowed to speak confidently upon what it has recorded. But I feel very much inclined, after long deliberation, to consider the bearing of this history and of other parts of the divine record, to be, that the *earth was formed* at the *first* much as it is now, with *mountains and valleys*, &c. I need not enter largely into the proof of this opinion. Two remarks may suffice.

(1.) The "*earth*", during the creative process, is never commanded to *change* or alter its *form* ; nor is any intimation given that its *form*, even superficially was at all varied from its original formation. The "*waters*" indeed are directed to their destination, that the "dry land" might "*appear*". But nothing at all seemed wanting to the *appearing* of the *land* but the removal of the waters,

(2.) In Psalm civ. 6, the divine writer seems not

obscurely to express the precise point, that “*mountains*” actually existed at the *creation* when first the waters covered them and all the earth. The ninth verse may indeed be supposed to allude rather to the deluge, but the general subject of the psalm, is clearly the *creation* and to the *creation* the psalmist applies the following language;

“*Thou coveredst it (the earth) with the deep as with a garment, the WATERS stood above the mountains.*” —But *this* it could not have done had there been no mountains.

3. If it were indeed so that the earth was originally created with elevated mountains and deep valleys, while the waters formed an “*abyss*” as the second verse of Genesis implies, *all round the globe*, there must have been *water enough* around it to cover the highest mountains. And if these waters were caused by God’s command (for the psalmist says, “*at thy rebuke they fled; at the voice of thy thunder they hasted away*”) to go into the *sea*, and into the *earth*, and into the *atmosphere*, it will greatly facilitate our conception of the *capacity* of the *diluvial* waters, to cover the highest mountains, which we read they did, without any feeling of embarrassment as to their *sufficiency*, which has often been a subject of great difficulty respecting the deluge.

I do not see that the declaration “let the waters be gathered into one place,” so long as the fountains in the earth and in the sea are supposed to *unite*, is any objection to this opinion. While on the other hand, several passages of Scripture seem to favour the supposition.

4. Job xxxviii. 8. ; Ps. xxiv. 2, xxxiii. 7. xcv. 4, 5 ; Prov. viii. 24, 28, 29. 2 Pet. iii. 5. If it be asked, *what* it was which previously *filled up* those “fountains of the great deep,” in the earth, *into which* the waters, originally on the *surface*, are by the above notion supposed, on the third day, to *retire*: we can only say, we do not know, because the divine historian has not told us. But there is certainly nothing either unscriptural or unphilosophical in conceiving that the “firmament” or expanse, which now divides, suspends, and balances the waters *about* our globe, might be *concerned in this matter*. It is more than probable that *air*, as well as *water*, was a part of the earth at its first creation. But *where* or how the *air* was situated before our *atmosphere* was formed, on the “second day,” we are not told: and I do not feel myself warranted by the Scriptures, to establish any peculiar system of *philosophy*, which would enable me to explain it.—It *might* occupy those fountains. It is plain, however, from the narrative, that it could not exist in the nature of “*wind*,” upon the surface of the waters.—What is plain in the Bible I firmly embrace,—what is not revealed I do not pretend to know,—respecting what is doubtful I am not allowed to be positive,—and what is contrary to the word of God I am obliged to reject.

The geological pretensions which seem to have induced Mr. *Penn* to view the earth as *originally* formed *level*, and as subsequently raised into *mountains* and depressed into *valleys*, we shall examine in due time. And I hope it will be found like every part of the same Theory which appears to thwart the

Bible, not only without foundation, but demonstrably erroneous and untenable, on its own ground.

V. 11, 12. "And God said, Let the earth bring forth grass, the herb yielding seed and the fruit tree yielding fruit, after his kind, whose seed was in itself upon the earth: and it was so. And the earth brought forth grass, and herb yielding seed after his kind, and the tree yielding fruit, whose seed was in itself, after his kind; and God saw that it was good."

1. At every stage we are struck with the unaccountable gloss which Geology would throw over this beautiful narrative, which, if it be valuable in any shape, it surely is so for its divine simplicity and straight forward plain meaning. But who, possessing common understanding, would write thus on every subject, as from the very mouth of God himself, and detail with such peculiar emphasis the very first origination of "*trees*" and "*herbs*," when "*trees*" and "*herbs*" had existed "thousands of ages," and many times been merged in the sea, and as often brought forth to land and life again?

2. It seems very remarkable that Mr. Faber, and some other learned writers, should have imagined that the "*herbs*" and "*trees*" originally grew gradually *from seeds*; when the words plainly express that the trees and herbs were caused to exist as trees and herbs, with their seed in them, matured and ripened; and not from *seeds* first planted. Animals must needs have perished for want of food, had the length of time which is now taken up, been at first consumed in bringing

plants to perfection. I know the same author supposes that the sturdy rocks had thousands of years in which to pulverize, and the plants nearly as many to come to perfection : But such extravagant notions will naturally die with the rest of this newly imported Theory.

3. Geologists, by contending that “thousands of ages” and “thousands of animals,” succeeded each other on *this earth* before the period to which this narrative refers, not only confront the true *spirit* of the record, which is a *history* of *the* CREATION, as we have seen, but *literally* and positively *contradict* it. Not only is this implied in the language, “LET *the earth bring forth grass;*” but the recapitulation in the fifth verse of the next chapter expressly asserts that these were the *first* planting of the earth which ever was effected, The *making* of the earth, and *this planting* of it with vegetables and fruit are particularly fixed to the same period ; namely, the preceding six days’ narrative.

After referring, perhaps more especially to the generations of animals which God had “created in the day that the Lord God made the heavens and the earth,” the sacred historian goes on immediately to add,

“*And every plant of the field before it was in the earth, and every herb of the field before it grew.*”

This is demonstrable evidence, or rather positive information that the Almighty’s fiat—“Let the earth bring forth grass”—went “before” “*every plant of the field was in the earth,*” and before “*every herb of the field grew ;*” and that this *fiat* planted them in the

earth in their maturity for the first time, and made them to grow there.

That the above interpretation, and not the notion that “plants and herbs” were first created in *seeds* “before” they were “*in the earth,*” and then planted as *seeds*, is clear from what we have already observed, and from the very words of this verse as well; which speaks of “*plants*” and “*herbs*” and not of their *seeds*. Besides, this verse is not so much describing the *manner* how the herbs were planted, as that they never were *planted at all*, and never were “IN THE EARTH” in any way, until the period of the foregoing history of creation. Indeed, the sacred historian seems to give as a reason why the plants could not possibly have grown up in the ordinary way—that there had been no “*rain upon the earth*”—till after the plants had been formed mature; and that then only, for some time, a “*mist*” went up and watered the ground; or rather, probably, as some critics would translate the words—“*nor even a mist went up and watered the ground.*” Nor was there a man to till it.

The *philosophy* of these *divines* appears greatly analogous to that of modern *Geologists*, and both seem unnatural and erroneous. They appear to reason from the *operations* of nature to the *origin* of nature, for which they have no data. “Seed” before the vegetable, is like a child before the parent. It forgets the Scriptural and real character of these things,—That the Almighty produced a world perfect in kind—moral, mental, natural—animal and vegetable, “*pleasant to the eye and good for food.*”

Besides these plants of which Moses here tells us

the *first* origination, are the identical plants which God placed in the ground *at the beginning, when the heavens and the earth were created*: yes, “*in the day* (the very period) *that the Lord God made the earth and the heavens.*” It is impossible then that thousands of years could have elapsed since the earth was made, and yet before the above event took place.

V. 14—19. “And God said let there be lights in “the firmament of heaven to divide the day from the “night; and let them be for signs and for seasons, and “for days and years: and let them be for lights in the “firmament of heaven to give light upon the earth; and “it was so.

“And God made two great lights; the greater light “to rule the day, and the lesser light to rule the night: “he made the stars also.”

“And God set them in the firmament of heaven to “give light upon the earth, and to rule over the day “and over the night, and to divide the light from the “darkness: and God saw that it was good.”

“And the evening and the morning were the fourth “day.”

1. I must refer the reader back to what was said on the first verse, for an opinion whether the heavenly *bodies* were actually *created* on the “*fourth day*,” or whether they were created on the “*first day*” when the “*earth*” was created, as I suppose they were, and are to be included in the intimation of the first verse on this subject,—“*In the beginning God created the heaven and the earth.*”

2. It is very evident, however, that the heavenly bodies were not constituted *luminaries* till the “*fourth*

day." For *that* is expressly, and distinctly, and intentionally declared: "*And the evening and the morning were the FOURTH DAY.*"

3. These luminaries were on the fourth day, *made luminaries*. The "*light*," previous to the fourth day, was created, and divided from the darkness. But on the "fourth day" it was concentrated in the heavenly bodies; and this constituted them "*lights*."—It is clear that our *correspondents* &c. are quite mistaken who consider the work of this "fourth day" to have consisted in only making the heavenly luminaries visible to the earth, by the removal of some "*mist*" or previous obstruction: For this supposition would utterly destroy the character of the divine record.

It would, in the first place, be a very extraordinary, not to say absurd supposition: as there *was* "*light*," and light upon the *earth* too, from the "*first day*" forwards. The gloss of that truly learned and very respectable author Granville Penn, Esq. is here equally inadmissible; viz. that the *light from the first issued from the sun*. That opinion, which Rosenmuller adopted from the Hebrew writers, would dis-arrange and destroy the plain meaning of this divinely simple and beautiful narrative, it would be a perfect anomaly and literally *leave nothing* for the important operations of the "*fourth creative day*," to effect.—It is very plainly said,

"*Let there be lights in the firmament of heaven.*" The first information is, "*Let there BE lights in the firmament of heaven.*" This is the precise language of the narrative throughout, when it announces the *original* and positive creation or *production* of the

thing intended. Now the thing here intended, is "*lights in the firmament of heaven.*". As, "let there be light"—"Let there be a firmament,"—"Let the waters be gathered,"—"Let the earth bring forth,"—"Let there BE LIGHTS in the firmament of heaven." And, not let the lights be *visible* to the earth.—Moreover, as if to render evasion impossible, the sixteenth verse says, "and God *made* two great lights." And in the next verse, it is further added, "and God *set* them in the firmament of heaven."

4. The *utility* of these heavenly luminaries to the earth, is particularly expressed as a subject distinct from their *being* "*lights*"—from their being *made lights*—and *being placed* in the firmament of heaven. After it is said "Let there be lights," it is added, "Let them give light upon the earth." And after it is said, God "*made* two great lights, and God set them in the firmament of heaven," it is added, "to give light upon the earth." If all this mean only the removing of a "*mist*," or *obstruction* from the earth, could any thing be more calculated to mislead?

When therefore we hear it so often repeated that few Divines now believe that the heavenly luminaries were *made lights* on the "*fourth day*", I hope it is no disrespect to say to such Divines, that they who hold themselves in readiness, on every petty call of a theoretical philosophy, to quibble at the plain record of God's word, are not creditable believers in that Bible which they profess to regard.

May we be permitted to ask, why few Divines believe that the *heavenly bodies* were constructed lights on the fourth day of creation? The opinion arises

from some deduction of philosophy, not more, probably, respecting the relative periods of the world's creation, than a notion that Moses seems to ascribe too great an importance to the earth, and appears to speak as if the sun was almost made for *its* use *alone*; whereas *philosophy* would rather lead us to conclude that the sun and other heavenly bodies existed thousands of ages before the Mosaic creation.—To this I answer

(1.) The objection arises from *philosophy* “falsely *so called*.” Philosophers know nothing about creation but what the Scriptures tell them. This we shall consider more at large, in its place.

(2.) Our *objectors*, however, *now* associate *Geology* with their philosophy. But what does Geology teach them? If Geology be true, and it be true, as this *modern* science assures us, that the “*earth*” existed “*thousands of ages*” before the “*human race*” or any rational being, or even important animal inhabited it, *other planets* may have done the same.—Then the *planets* may not be *inhabited* even *now*; and they *never may*! Thus then, GEOLOGY would make the SUN *to be useful* to the EARTH ALONE.

5. When Moses says, “*God made two great lights*,” he clearly points out to us the *subject* upon which he was speaking. That is; not the comparative *magnitude* of the heavenly *bodies*, but of their “*lights*.” And not of their “*lights*” in the abstract, but in their *relation to the earth*.—Thus, we shall perceive that, by regarding what it is which the sacred historian intends to teach, he has not only given us *intelligible*

information, but informed us in a manner which is *literally correct*.

6. When the Creator placed the *sun* and *moon* in the heavens, they were to “divide the day from the night, and to be for signs and for seasons, and for *days* and *years*.”—Here we see that the *natural day* and the *natural year* are both introduced, when the luminaries were stationed, upon which the natural day and the natural year were henceforth to depend. This language seems as if it were used on purpose to prevent our forcing this simple and intelligible history into any fanciful or mysterious meaning. The *day* and the *year* in *this* place, are unquestionably the *natural day* and *natural year*. It would be egregious folly to suppose they meant any thing else. And it would be little less folly to suppose the sacred penman used *these terms in different* senses in the different *verses* of this *chapter*.—Such interpretations then as Mr. Faber’s, which makes each *day* to mean six or seven thousand years, are perfectly visionary and inadmissible: or, such as Mr. Buckland’s different “*hypotheses*,” respecting *lengthening the days*, would demand.

V. 20—23. “And God said, Let the waters bring forth abundantly the moving creature that hath life, and fowl that may fly above the earth, in the open firmament of heaven. And God created great whales and every living creature that moveth, which the waters brought forth abundantly, after their kind, and every winged fowl after his kind: and God saw that it was good. And God blessed them, saying, Be fruitful and multiply, and fill the waters in the

“ seas, and let fowl multiply in the earth. And the evening and the morning were the fifth day.”

1. It would seem from this history that the “ fowls” were created out of the *water* as well as the fishes. Though the nineteenth verse of the second chapter rather appears to support the notion that the “ fowl of the air” were “ formed” out of the *ground*.

2. The creation of fishes and fowls, as Moses has given it us in this narrative, cannot possibly subsist for a moment under the supposition that the geological Theory is true. For it is in this part in the first instance where they clash most extensively and directly.

This is the *first creation* of things “ *having life.*” And all sorts of *fishes* even to the whale itself are here formed at once. But Geology proclaims a succession of *shell-fish*; then of amphibious *reptiles*, and scarcely any *fishes* worth the mention, in their earlier strata. Nay, it is essential to the very existence of M. Cuvier’s Theory that numerous races of shell-fishes, of quite different character each from the ones preceding, should have lived, died, and become inclosed in solid rocks succeeding one another from the primitive rocks to the flætz formations, while next to nothing else existed in the ocean. One revolution after another is supposed to have occurred both in the place and nature of the ocean. And this for undefined ages before *any fishes*, such as the large ones here mentioned, and such as are now *known*, had *any being*. Yet

3. Nothing can be more evident than that Moses means in this narrative, to give us a detail of the very

first races of *fishes* and *fowls*; indeed of all the races that ever the sea produced. When the Almighty says “*Let the waters bring forth abundantly, the moving creature that hath life,*” could any one, not versed in the dialectics of modern Geology, dare to assert that the waters had contained millions of moving creatures which had “*life,*” for *thousands of years before this period?* And when it is said, “*God created great whales, and every living creature that moveth, which the waters brought forth abundantly,*” who could have supposed that all this meant only *one* amongst numerous such productions?

And when their creator blessed them and said, “*be fruitful and multiply and fill the waters in the seas,*” can any sane man who does not wish to insult the Almighty and disgrace the historian, assert that this was said after the unchangeable God had just *destroyed* a whole sea full of *fishes* and had created a sea full of fresh ones!! such folly and trifling may be suitable to heathen poets and fabulous historians; but he is unworthy of the name of christian who conceives them to besem the dignity and simplicity of divine record.

(4.) There is no possibility of making this narrative consistent with this geological “*Theory.*” For were we to take the liberty of lengthening the “*six days*” and destroying the “*sabbath,*” by adopting the “*hypothesis*” which supposes the sacred historian to describe the actual state of the existing strata, our liberty would be all in vain. For in that case, this history, if it be a history, records the immediate creation of *all* the fishes and fowls, under *one command,*

and as *one transaction*. But *this* is as destructive to the claims of Geology, as any other supposition. For *it* makes a gradual progression, and a long series of successive changes and advances in the scale of perfection, among the fishes, necessary to its very existence—and were we to adopt Mr. Buckland's supposition; namely; that all which Moses has detailed respecting these "six days" labour, is confined to "the preparation of this globe for the reception of the human race;" nothing can be further from the truth than such a "hypothesis."

For, beside an infinitude of difficulties, as we have before shewn, there is *one* of itself a most destructive position, which is this; Geology supposes that the *sea*, for "thousands of ages" before the creation of man, swarmed with living creatures. But, to make even common sense of the *Mosaic narrative*, we must contend that every one of these living beings was previously *destroyed* and so made way for an *entire new creation* of all sorts of living creatures, as Moses relates it. This however would be perfectly ruinous to their Theory in more ways than one. It would imply *two miracles*, one for destruction, and another for re-creation, neither of which, as may hereafter be considered, is at all admissible in this science. It cannot consistently with its own existence, resort to any, beyond "physical and chemical, causes" in geological revolutions.

V. 24—25. "And God said let the earth bring forth the living creature after his kind, cattle, and creeping thing and beasts of the earth after his kind: and it was so. And God made the beast of the

“earth after his kind, and cattle after their kind, and
“every thing that creepeth upon the earth after his
“kind: and God saw that it was good.”

I need not stop here to answer or to repeat the extraordinary absurdity which Geology makes of this passage, as well as the preceding one, by assuring us, that “beasts,” and cattle, and creeping things” innumerable, *had replenished the earth* “*thousands of ages*” previous to *this creation*.

V. 26—28. “And God said, let us make man in
“our image, after our likeness: and let them have
“dominion over the fish of the sea, and over the fowl
“of the air, and over the cattle, and over all the earth,
“and over every creeping thing that creepeth upon
“the earth.

“So God created man in his own image, in the
“image of God created he him; male and female
“created he them.

“And God blessed them, and God said unto them,
“be fruitful, and multiply, and replenish the earth,
“and subdue it: and have dominion over the fish of
“the sea, and over the fowl of the air, and over every
“living thing that moveth upon the earth.”

1. We see here that the *cattle* and the *human race* were created on the *same day*. If then we separate *these two*, as Geology demands that we shall, even “*thousands of ages*,” we must resort to some such expedient as that of Mr. Faber. Or if we assert on the other hand, that Moses records only *modern* cattle, and such as accompany the *human race*; then we shall run upon those insuperable difficulties which we have already considered, in the preceding chapter, and which

never can in any way be reconciled. Such as the heavens and stars &c. being involved in the process of preparing "this globe" for the use of man!!

2. Man is made the Lord of all the earth, of the fowls of the air, and the fishes of the sea. It would appear then that the creation of this globe, as intimated before from the prophet Isaiah, takes its character of perfection from the "human race." Where then is the philosophy, the wisdom, yea the common sense in building, destroying, and rebuilding the *mansion* many times over, before its *Lord* is made to occupy it? And where the propriety of extirpating by miracle every race of fish, fowl, and animal, to create fresh ones for man to rule over!! If the numerous races of animals and the numerous revolutions which according to Geologists, destroyed them, were (as it now appears they were) unworthy of the least mention in *this history* of creation, is it a thing worthy to be ascribed to the *Almighty*, that he should have been for "thousands of ages" *engaged*, as it respects this globe, in doing nothing else, but making and demolishing the earth, and its inhabitants!!

3. Besides: With what propriety can Geologists pretend to derive from *this history*, as Mr. Buckland does, (Lect. 23.) evidence that is "positive and decisive" for "asserting the low antiquity of the human race." There is not a word or an intimation given which implies that *man* is more modern than the *animals*. If therefore *this narrative* does not deny a *previous* state of the earth, and previous races of *animals*, it does not *deny* the *previous existence* of *other* races of *human beings*. And if any geological "antiquary

of a new order" (Cuv. p. 1.) should "assert" that the "*Guadaloupe Skeletons*" were imbedded in that rock "thousands of ages" before *Adam* was created, nothing which Geologists have hitherto developed could possibly disprove the fact.

V. 29—31. "And God said behold I have given " you every herb bearing seed, which is upon the face " of all the earth, and every tree, in the which is the " fruit of a tree yielding seed ; to you it shall be for " meat."

" And to every beast of the earth, and to every fowl " of the air, and to every thing that creepeth upon the " earth, wherein there is life, I have given every green " herb for meat : and it was so.

" And God saw every thing that he had made, and " behold it was very good. And the evening and the " morning were the sixth day."

1. I am not aware that it is necessary for us here to enter into further discussion about the general character of this simple, majestic, and God-like narrative. If I were to say any thing respecting the whole and every point thereof which is essential to our information as perspicuous, intelligible, and convincing, I should repeat, as applied to the *history*, what the history says of the *things* which were done ; "*and God saw every thing that he had made, and behold it was very good.*" —"*EVERY thing that he HAD MADE.*" Then every thing was in its perfection before him, which the Lord God had made." There could then have been no prior revolutions and destructions of the works of God. They were *all here, and all good.*

2. “*God saw every thing that he had made, and, behold, that it was very good.*”

What a peculiar, and beautiful emphasis. “God saw every thing that he had made.” The Almighty contemplated his new creation. Infinite wisdom surveyed its parts, properties and tendencies. And infinite purity and goodness approved the whole.

Then every part of it was pleasing to God. Every part of it was what he wished it to be. Then no part of God’s creation had any propensity to discontent or rebellion. Whatever was the will of the Lord, was the will of the creature. Whatever *he* ordered would be cheerfully performed, and whatever he granted would be gratefully received. While “all was good very good,” there could be no desire for more than *he* gave, and no inclination to take what *he* withheld.— We do not touch the *moral* question here, we have enough without.

CHAPTER VIII.

REFLECTIONS ON THE PRECEDING HISTORY OF CREATION.

I. FROM the close of the foregoing chapter we obtain an inference or two respecting animals, most important indeed in geological speculations, according to the modern turn which they have taken under M. Cuvier's instruction. They are these ; that,

1. *Animals were not created carnivorous.*

I hold this to be a most indisputable principle.

First. If animals were created carnivorous they would instantly have fed upon their fellow creatures. Then unless *many* of one kind had been created at first the animals upon which the others fed would have immediately become extinct. Either of which we have no grounds to suppose.

Secondly. If animals were *created carnivorous*, "death," even violent death must have been common in the creation from the very beginning. But the Scripture represents '*death* as entering into the world by *sin* :—Had lions and tigers, &c. been as voracious from the first as they are now the earth must

have been in danger of being depopulated; And Adam himself would not have been safe from destruction by voracious animals.

Thirdly. I hold this as an indisputable truth, not only from the moral reason of the thing, and the unnatural and destructive consequences of a contrary admission, but especially from the two positions which now lie before us. Namely these:—God granted to *all the animals, only vegetable food*;—And their being “*very good*” shews that they were *not created* with a propensity to *desire more*.

“And God said, behold, I have given you every “herb bearing seed—and to *every beast* of the earth, “and to every *fowl* of the air, and to every thing that “creepeth upon the earth, wherein there *is life*, I have “given *every green herb for meat*: and it was so—*And every thing was very good*.”

This fact, if it needed any confirmation, viz. that God granted to *man* and to *animals* vegetable food *only*, would derive it from the circumstance that, after the deluge God gave *animal* food to man by *express* permission. “Every moving thing that liveth shall be meat for you; even as the green herb have I given you all things.” Gen. ix. 3.

It is no objection to this, that *animals* have no express permission to eat each other.

Nor is Mr. Faber’s notion at all valid, that the destruction of one animal by another, would give to Adam a just idea of the first threatening of “death” against disobedience. For if Adam obtained any illustration of that denunciation from *carnivorous* animals, he must have believed that death meant that

he should be eaten by wild beasts, or be devoured by his own species!!

I meddle not here with the entrance of sin, with freedom of will, and metaphysical difficulties. But I feel my ground safe in every sense as it respects *animals*. Their propensities were instincts implanted immediately by the will of God, and dependent entirely upon Him. It would be therefore the grossest insult to the wisdom and goodness of God to suppose animals *carnivorous* under the *allowance* of *vegetable food only*; and a direct violation of this history which makes "all very good" between God and his creatures. I hold it certain therefore,

—That God gave to the animals for food, what was suitable to their natures. But

—As he granted them *vegetable food only*, *vegetable food* was all they wished for.

—Therefore, animals were not created *carnivorous*.

2. *Animals have changed their nature.*

We all know that many animals are *now* carnivorous. But if they were not *so* created, their natures are *changed*. The difficulties of this case, as it respects natural history, it does not belong to me to solve. The inference is indisputable upon all sound principles of rational argument, if we allow the truth of the Mosaci record. I do not urge the congeniality of this case with our moral and humane feelings. For probably he who *laughs* at Moses would deride our sensitiveness as effeminacy. Nor do I undertake to prove how far this change in the animal propensities has affected their external or internal *organization*. Or how far that peculiar structure which M. Cuvier

attributes to animals which kill their own meat, may have been *created with them*, and therefore suitable to *both a vegetable and animal diet*.

The *diet* of animals is far enough from bearing such marks of peculiarity as M. Cuvier's system makes necessary. Perhaps there are few animals which could not digest *both* vegetable and animal food. *Dogs* and *cats* could certainly live upon *vegetable* food alone, in a domestic state. And swine, cows, and rabbits we have seen eating animal flesh. Nor does it appear at all probable that the *human race* had not precisely the same *digestive organs*, before man was permitted to eat *flesh* as afterwards.

We have, however, an *historic fact* recorded, by which it appears clear that *carnivorous* animals themselves, did actually live for the space of a whole year upon *vegetable* food only; and this full sixteen centuries after the fall of man; I mean the time of their abode in the *Ark* during the prevalence of the universal *Deluge*. The Almighty said to Noah;

“Take thou unto thee of all food that is eaten, and ‘thou shalt gather it unto thee; and it shall be for food, ‘for thee and for them.’” Gen. vi. 21.

1. “*Food that is eaten*” must clearly mean food, which God had *permitted* to be eaten. And it is evident that *Noah* dare not, without God's express direction, include in his provision for the ark, any other than *vegetable* food.

2. “*Thou shalt gather it to thee; and it shall be for food for THEE and for THEM.*”—For *thee* and for *them*—confines this food to such as *Noah* had been accustomed and allowed to eat; which was vegetables

only. This is clear from the *grant* of animal food *after* the deluge.

3. There is nothing mentioned which could lead the mind to suppose that animals were taken into the ark for *food*. The *seven* pairs of *clean* beasts, were manifestly for *sacrifice after* the flood, and for the sustenance of man. Otherwise the sacrifice of "*every clean beast and of every clean fowl*" (Gen. viii. 20.) might have extirpated many species from the earth.

Changes in the organic structure of animals is a subject which I need not here pursue.

But I think it important to intimate in this part, the nature of the bearing of this *fact* upon *Geology*; and so far to inform the reader respecting its future application and utility. I am firmly of opinion that the circumstance — *that animals have degenerated from their original state into carnivorous habits*—whether that degeneracy has changed their conformation, or whether their conformation be adapted to *both* a vegetable and animal diet; is capable of being applied so as to *root up the foundation-stone of M. Cuvier's new defence of an old geological Theory*.

II. GENERAL REFLECTIONS.

The second chapter confirms the first, and adds further evidence to it as a *first creation*.

1. The 1, 4, and 5th. verses are decisive as to the *objects* to which the "*detail*" of the Mosaic narrative is to be applied. These are — "*The heavens and the earth—and all the host of them.*" But we have seen that this language, in the

Bible, embraces every part of *creation* of which we have any knowledge or information.

—*These objects apply to a first creation.* Adam giving names to the cattle, proves the whole to have been an original process, in connexion with the fourth verse, which expressly declares that “*these are the generations of the heavens and the earth WHEN they were CREATED,*” and not thousands of years *after* the “heavens and the earth” were created: but their generations, their tribes and races were thus constituted and arranged, “*IN THE DAY that the Lord God made the EARTH and the HEAVENS.*”

2. The Almighty’s resting on the “seventh day,” and his instituting the “Sabbath” in consequence, is a certain proof, that *six natural days* alone are intended as the creative period.

“And on the seventh day God ended his work which he had made; and he rested on the seventh day from all his work which he had made. And God blessed the seventh day, and sanctified it; because that in it he had rested from all his work which God created and made.” (Gen, ii. 2, 3.)

It is quite impossible to make common sense of this passage if *all* God’s works after creation are not here intended. And, taken in connexion with the fourth commandment, several times repeated, no man living can make less of it than what it expressly says; “In six days the Lord made heaven and earth, the sea, and all that in them is, and rested the seventh day; wherefore the Lord blessed the seventh day, and hallowed it.”

Now, it was quite impossible without utter contempt

of God's word, as Mr. Faber was well aware, to *lengthen* the *creative* "six days," without also equally extending the length of the "*Sabbath day*." This however, in another form, makes just as little importance of Scripture as the other hypothesis does, besides making the most perfect nonsense and absurdity of the "*Sabbath day*." I had prepared a full answer to this learned author's extraordinary hypothesis. But as he seems to have withdrawn his defence of it, and as it must necessarily fall with every other buttress set up as the support of this geological "Theory" provided we can overthrow the *Theory itself*, I shall, for the present omit the insertion of it.

In all fairness then and honesty of interpretation it is undeniable that the six days of creation embrace the real and original creating and making of the heavens, and the earth, the sea, and all they contain. And that we know of no creation whatever besides this.—All therefore of Mr. Buckland's "*hypotheses*" must fall to the ground.

OBJECTION.

I must here notice an objection to the literal interpretation of the Mosaic narrative which we have given, arising from a supposed anticipation, in the history of the six days, of work which was not done till after the six days were expired.

The first chapter states that *male and female* were included in the six days of creation; but from the second chapter we learn that Eve was not created till afterwards—indeed, not till after Adam had named all

the cattle &c.—It is supposed therefore that the time thus taken up, and by the sleep of Adam in addition, would prolong the formation of Eve, beyond the six days. If then, it is argued, more be recorded in the narrative of the six days than did actually take place in them, the literal interpretation of the six days work of creation cannot be supported.—To this I answer,

1. This objection would apply with equal force against the hypothesis adopted by many, and particularly by Mr. Buckland, which hypothesis considers the six days work to be confined to the “preparation of this globe for the reception of the human race,” and which embraces the creation of Adam and Eve in the work of the six days.

2. The objection is taken from the time which a process, of which we are greatly ignorant, would require. But no man I think will deny that Adam could name every beast and every bird, in the course of a few hours. And if so, the rest is perfectly easy, and the objection dies of course.

N. B. As *Adam* gave names to all cattle *significant of their character*, we learn the extensive *wisdom* with which *he* was endowed, and the extreme absurdity as well as infidelity of that philosophy which considers the *infant creation* as *barbarous*, and that it belongs to the nature of man as well as animals to grow and advance in the scale of *perfection*.—This accords with the *philosophy of Atheism*. But the truth is *man* has *degenerated* and all nature with him, from their original *perfection*; and the tendency of his *nature* is to grow worse and worse.

III. THE ANGELS.

The creation of these heavenly beings I admit is not *expressly* said to be included in these six days of creation. But I feel inclined to believe that the indirect testimony of Scripture, is strong in evidence that they were then created ; probably on the first day, because they sang for joy when the world was finished. My opinion is formed, in brief, on the following grounds.

1. They are often included in the language, “*the hosts*” of heaven. But the “hosts of heaven” which include also the heavenly bodies themselves, were created in the “*six days.*” “Thus the heavens and the earth were finished and all the host of them.”

“The host of heaven worship thee.”^v

“I saw the Lord sitting upon his throne, and all the host of heaven standing by him on his right hand and on his left.”^w

“And suddenly there was with the angel a multitude of the heavenly host.”^x

2. These “hosts of heaven,” or “heavenly hosts, are angels who dwell *in heaven*. Saint Paul calls it the “*third heaven,*”^y or paradise. Moses speaks of the “heaven and the heaven of heavens.”^z And the author of the book of Kings says ; “behold the heaven and the heaven of heavens cannot contain thee.”^a The psalmist writes : “The Lord made hea-

^v Neh. ix. 6.

^w 1 Kings, xxii. 19.

^x Luke, ii. 19.

^y 2 Cor. xli. 2, 4.

^z Deut. x. 14.

^a 1 Kings, viii. 27

“ven and earth. The heavens even the heavens are “the Lords : but the earth hath he given to the children of men.”^b

There are in Scripture *three* heavens mentioned. The *aerial heavens* where the clouds and birds fly ; the heavens where the *stars* are fixed ; and the highest heavens where the *angels dwell*.

If then these *angels* and their *habitation* be *creatures* which God has made and whose creation is at all noticed in the *Scriptures*, which doubtless it is there noticed, they must come under the general account of creation ; for there is *but one* creation recorded in Scripture. *Saint Paul* must include *angels* among “all things created visible and invisible.”^c Yet he extends his views no further than to “*things*” “*that are IN HEAVEN, and that are IN EARTH.*” But we have seen that Christ the son of God made all these “*in the beginning.*”^d “Thou Lord in the beginning hast laid the foundation of the earth ; and the heavens are the work of thy hands.”^e Yea ; “all things were made by him ; and without him was not *any thing* made that was made.”—“All things were made by him, when he was “in the *beginning* with God.”

3. The Psalmist evidently includes the *angels* under the general description of creation, and states them to have been made by the same process as, (other Scriptures state respecting,) the general creation.

“By the *word* of the Lord were the heavens made ; and all the *host* of them by the breath of his mouth.” “Let all the earth fear the Lord :—for he spake and it was done ; he commanded and it stood fast.”

^b Ps. cxv. 15, 16. ^c Col. i. 16. ^d John i. 1—10 ^e Heb. i. 2, 10.

“Praise ye him, all his angels ; praise him all his hosts.”

“Praise him sun and moon : praise him all ye stars and light.”^f

“Praise him, ye heavens of heavens.”

“Let them praise the name of the Lord : for he commanded and they were created.”^g

4. Perhaps the most demonstrable argument of all will be found in the *second*, taken in connexion with the *fourth* commandment. The *fourth* expressly says that “*In six days the Lord made heaven (or the heavens, for the noun is plural)—and all that is in*” *heaven*. Now from the very character of the *second* command, which forbids *idolatry*, it is quite certain that ALL CREATION is included and forbidden to be worshipped “in heaven, and earth, and the waters under the earth.” But the residence of *angels* is the *third heaven*. Then the “*third heaven*” is included in that *second* command.—Then the third “*heavens and all that is in them*” (which were created) were created in the said “*six days*,” according to the *fourth* commandment. For surely, if any correct information be given us in the ten commandments, which were “written by the finger of God,” the ‘*heaven, earth, and sea*’ of the *fourth* commandment, cannot be less or more than the ‘*heaven, earth, and sea*,’ of the *second*. Clearly then,

If these angelic beings do *not* belong to the scriptural heaven we know nothing of their creation. If they *do*, and they unquestionably do belong to it, they

^f Ps. xxxiii. 6, 9.

^g Ps. cvliiii. 1—5

^h See chap. 6. p. 42.

were *created* in the "SIX DAYS." "FOR IN SIX DAYS the Lord made HEAVEN AND EARTH, the SEA, and ALL THAT IN THEM IS."

IV. THE UNITY OF CREATION.

It is with surprise and regret that I find a writer of Mr. Buckland's character speaking of Geology as confirming the *scriptural* record in all points of most essential importance; these he states to be, "The two great points of the low antiquity of the human race, and the universality of a recent deluge." He says the "Scripture is positive and decisive in asserting the low antiquity of the human race." (Lect. p. 23—4.)

What will not prejudice and Theory lead authors to assert? It is as certain as that there is information given us in the Bible at all, that the *Mosaic* record affords precisely the *same evidence* and ascribes the *same antiquity* to the *whole creation*. If the evidence of *Moses* be of any value it is as certain that *fishes* were *first* created on the *fifth* day, as that *cattle* and *man* were created on the *sixth*. And with respect to what Saint Paul says of "*Adam*" as the "*first man*," and of all nations being peopled by "*one blood*," Geology could in an instant, if it suited its turn, tell us that *that* "*first man*," only applied to the *head* of the present *existing* race of men, and not to those who lived, as fishes and brutes lived, "thousands of ages which preceded the existence of his [present] race".

It is perfectly clear, if any thing advanced in the divine record can be clear, that the scriptural account of creation is *one* and undivided. There is not one

atom of evidence in the word of God, that the *earth* was created at one time, and *man* at another. And *no hypothesis* built on such an admission, can possibly be maintained without absolute destruction to the *inspiration* of the Scriptures ; and without the liberty of bending the word of truth to any thing we please.

If then the Scriptures are *positive and decisive*, and therefore *correct* in what they assert respecting the “low antiquity of the human race,” they are equally decisive and correct in asserting the *low antiquity* of animals and fishes of “every race.” And, therefore, the vast *antiquity* of the objects of *Geology* are fabulous and visionary.

V. SECOND CAUSES.

It would be a gross insult to the understanding both of the Divine Author, and to the reader, to suppose that any thing in the character of “*second causes*,” had any place in the *whole of this creative process*. There is *no room* for their operation either in the *objects* created, or in the *process* and manner of creation.

All “*second cause*” operations, of course, regard as we have seen, the *earth* alone. But the Mosaic narrative includes “*the heavens and the earth*,” *with all their “generations” and all their “hosts.”*

“Second causes,” according to *Geology*, had formed *the earth*; (and the *animals* great and small which for “thousands of ages” occupied its surface required that it should be,) nearly as it *now* is, both for *light* and *air*. But certainly there was neither light

nor *atmosphere* before the Mosaic creation of six days. And as certainly no second causes operated THEN.—“God created the heaven and the earth—God said, “let there be light—let there be a firmament—let the “waters be gathered—let the earth bring forth grass—“let there be lights in the firmament of heaven—“let the waters bring forth—let the earth bring forth “the living creature—And lastly, let US MAKE MAN : “and it WAS SO !!”

Here then we find the *earth* and the *sea* created immediately by God. We find these earth and sea bringing forth and swarming with life. But the *immediate* and *sole parent* of *all* is *God*. The fishes are generated without spawn—the fowls without eggs—the vegetables without seed, or “a man to till the ground”—and animals, without progenitors. There is no “second cause.” God MADE them. He made them out of the waters and earth it is true ; but who will call these “second CAUSES.” They are not causes at all. They are passive materials at most, and themselves just created by Jehovah.

“And God blessed them, saying, be fruitful and multiply.” Out of *this benediction* the earth is replenished. “Second causes” are *henceforth* employed by the Almighty. He has formed a creation “*whose seed is in itself.*” And we now know of neither fish, fowl, vegetable, or animal but what springs out of “their kind.” Thus *animals* are generated ; and their lives are sustained by food.—God also made the “*sun* to rule the day,” at the *same time*. It so continues. But *prior* to that arrangement, “second causes” cannot be found in *earth* or *heaven*.

Vain, then, unwise, and presumptuous in the highest degree, are the pretensions, that “Geology becomes associated with astronomical speculations”—“by its” “investigation of the second causes — (*second causes!*) “that were employed in the gradual arrangement of “the matter of which our planet is composed, and in “producing the overwhelming convulsions that appear “at distant intervals to have affected it.” All these “*second causes*” and their employment in the *gradual arrangement of the matter of which our planet is composed*, are supposed by Geologists to have preceded, led the way to, or been connected with “*the preparation of this globe for the reception of the human race.*” (Lect. p. 10, 24.)

What, “Geology” point out “*the second causes*” &c.!—No. *Geology* has never developed one “*second cause,*” and never will. What the *Bible* tells us we know, and we know no more.

CHAPTER IX.

THE SCRIPTURAL HISTORY OF THE DELUGE.

THE reader may possibly feel the force of some of those prepossessions which may induce him to say, as many do; 'true, this indeed appears to be the meaning of the Scripture, but we cannot dispute against *fact: matter of fact* and an inductive philosophy admit of no dispute; we must take care how we set the word of God in opposition to the phenomena of nature, lest we raise up adversaries against it.'

I am prepared to meet all this: but must beg the reader to allow it to be at least possible that the Bible may on this subject mean what it says, as well as on other subjects. And we shall soon see that evidence, of a different nature indeed, but tending to the same result, will become manifest.

The word of God, I feel fully convinced, affords not merely a theoretical evidence avouching that Geology is untrue, but absolutely and in point of fact proves it to be egregiously erroneous. For either it informs us of real occurrences in the earth which furnish us with

positive views quite contrary to modern Geology, or it makes statements which unfold certain facts which are strictly inconsistent with it. Hence we hope to prove that what is assumed respecting Geology as *matter of fact* is in truth a *fancy* and no *fact at all*.—And I believe the scriptural account of the *Deluge* is abundantly sufficient for this purpose.—It occurs thus ;

“ And God saw that the wickedness of man was great upon the earth, and that every imagination of the thoughts of his heart was only evil continually.

“ And the Lord said I will destroy man whom I created from the face of the earth ; both man and beast and the creeping thing, and the fowls of the air.

“ And God said unto Noah, the end of all flesh is come before me ; for the earth is filled with violence through them : and behold I will destroy them with the earth.

“ And, behold I, even I, do bring a flood of water upon the earth to destroy all flesh, wherein is the breath of life, from under heaven ; and every thing that is in the earth shall die. ^h

In consequence of this an Ark was prepared, and clean beasts and clean fowls were taken into it by sevens ; and unclean by pairs only.

“ For yet seven days and I will cause it to rain upon the earth forty days and forty nights ; and every living substance which I have made, will I destroy from off the face of the earth.

“ And it came to pass after seven days, that the waters of the flood were upon the earth.

^h Gen vi. 5, 7, 13, 17.

“ In the sixth hundredth year of Noah’s life,
 “ in the second month,¹ the seventeenth day of the
 “ month, the same day were all the fountains of the
 “ great deep broken up, and the windows of heaven
 “ were opened.

“ And the rain was upon the earth forty days and
 “ forty nights.

“ And the flood was forty days upon the earth ; and
 “ the waters increased, and bare up the ark, and it
 was lift up above the earth.

“ And the waters prevailed exceedingly upon the
 “ earth ; and all the high hills that were under the
 “ whole heaven were covered. Fifteen cubits upwards
 “ did the waters prevail ; and the mountains were
 “ covered.

“ And all flesh died that moved upon the earth,
 “ both of fowl, and of cattle, and of beast, and of
 “ every creeping thing that creepeth upon the earth,
 “ and every man.

“ All in whose nostrils was the breath of life, of
 “ all that was in the dry land died.”²

¹ “ *Second month of the year.*” This seems to imply that the flood commenced about the middle (17th) of *October*. This appears,

1. Because the *ancient* mode of beginning the year, was in *September*. The Jews, but long after the *flood*, did begin their religious year in *March*. But this does not appear to have been the ground upon which the beginning of the year was, in this verse, calculated.

2. The *gathering of food* (ch. vi. 21) appears to speak the same language. For this would be the period just after all the “fruits of the earth” had come to perfection, and when the least inconvenience would be experienced in collecting it.

I do not hold this of great importance as a scriptural fact ; but it may possibly be *useful* hereafter for the purpose of illustration.

² Gen. vii. 4, 11, 12, 17, 21, 22.

Such was the *effect* of the flood. Its *continuance* is further stated, thus

“And the waters prevailed upon the earth an hundred and fifty days.

“And God made a wind to pass over the earth and the waters assuaged.

“The fountains also of the deep and the windows of heaven were stopped, and the rain from heaven was restrained.

“And the waters returned from off the earth continually; and after the end of a hundred and fifty days the waters were abated.

“And the Ark rested in the seventh month, on the seventeenth day of the month, on the mountains of Ararat.

“And the waters decreased continually until the tenth month: in the tenth month, on the first day of the month, were the tops of the mountains seen.

“And it came to pass in the six hundredth and first year, in the first month, the first day of the month, the waters were dried up from off the earth.

“And in the second month on the seven and twentieth day of the month, was the earth dried.”^k

Such is the account of Noah's flood; of its extent—its effects—and its continuance.

In order to obtain some idea of its true character—of its operations and effects upon the earth,—we must enter a little minutely into the evidence which this scriptural document affords.

Moses is very exact and particular in stating *whence* the waters arose—the *periods* of their advance and

^k Gen. vii. 24.—viii. 1,—5, 13, 14.

decrease—and the *time* which they remained upon the earth.

I. THE PERIODS OF THE DELUGE.

1. If we examine verses 4, 12, 17 of the vii. chapter, we shall find that the waters were *forty days advancing to their height*.

“And I will cause it to rain upon the earth, forty days and forty nights.

“And the rain was upon the earth forty days and forty nights.

“And the flood was forty days upon the earth.”

I know that in the twenty-fourth verse it is written, *the waters prevailed upon the earth a hundred and fifty days*. And from this some have intrepeted the passage to mean that the waters kept *increasing* one hundred and fifty days. But this must be a mistake. Their *prevailing* one hundred and fifty days can only mean relatively to the *ark*, so as to bear it up on the surface of the waters till the expiration of that time. For the Scriptures expressly declare that the *ark rested* at the end of *five* months, or *one hundred and fifty days*, upon the mountains of Ararat. We are told—the waters assuaged—“the fountains were stopped, “and the rain restrained,—that the waters returned “from off the earth continually: and after the end of the one hundred and fifty days the waters were abated; and the ark rested.—The mistake arising from this verse being removed, we are bound to believe that

The flood was forty days upon the earth, in advancing to its height, and no more.

2. *The time of its decrease also, will be found to be two hundred and seventy-five days.*

Chapter viii. 13, informs us, when compared with vii. 11, that the waters were TEN months and thirteen days upon the earth. Which according to scriptural reckoning at thirty days per month, will leave, when the forty days are subtracted—two hundred and seventy-five days.

This will allow the waters to have been *very nearly seven times* as long in returning from off the earth, as they were in increasing upon it: For forty multiplied by seven will amount to little more than two hundred and seventy-three.

3. If in addition to this we take the height of the snowy mountains in India as the height to which the waters rose when at the highest, which mountains are stated to be twenty-eight thousand feet above the surface of the sea; we shall obtain the following result. Twenty-eight thousand divided by forty, the days in which the waters rose, will leave just *seven hundred* feet per day for their *rising*: and *one hundred* feet per day for their *decrease*.—This will be an essential and important matter to bear in mind during our future discussions.

Here another important question is answered; namely,

II. WHENCE WERE THE WATERS DERIVED.

The sacred historian records that they were derived from the *windows of heaven*, and from the "*fountains of the great deep*."

“*The same day were all the fountains of the great deep broken up, and the windows of heaven were opened.*”

The “windows,” called in the margin, the “flood gates” “of heaven” we easily understand to be the openings to those reservoirs of water in the heavens from which the rain descended for forty days.

“The fountains of the great abyss,” I apprehend, mean those bodies of *water under ground*, from which must have arisen a large portion of those waters which covered the earth.—That there are large quantities of water contained in the earth is beyond a question.

1. Water, it has recently been ascertained, may always be found by digging sufficiently deep into the earth, and it is no uncommon practice in this country to bore for it. And when the augre has pierced certain strata, varying in depth according to the situation, the water naturally rises to the surface, and keeps up a perpetual stream.

2. The Scriptures intimate this in more places than that above quoted.

“He layeth up the deep in store houses.”¹

“When he established the clouds above; when he strengthened the *fountains of the deep*: when he gave to the *sea* his decree, that the waters should not pass his command:—then was I by him.”^m

Here we find the *fountains of the deep* distinguished from the *sea*. When Moses informs us that “*all the fountains of the great deep were broken up*;” and again, that “the fountains also of the deep, were

¹ Psalm xxxiii. 7. ^m Prov. viii. 28.

stopped;” surely more is implied than simply that the waters flowed, or gushed out from the sea. But if more be implied, it must mean the *opening* and *stopping* of the fountains of water underground. The avenues to these waters are implied to have been *numerous*.

It is said, “*all* the fountains of the great deep.”

3. These fountains cannot mean the *sea*, or the sea only; though, as we have already remarked on the second verse of the first chapter of Genesis, (p. 121.) the *sea communicates* with large portions of water contained in the bowels of the earth; which, we believe circulates through every part of it, as the blood through the animal body.—“The fountains of the *deep*” being “*broken up,*” must imply apertures or passages, or *ruptures* made in the earth by the issuing waters; which, as applied to the sea would be inappropriate; for the sea rests upon the *surface*, of the globe, and is not concealed or inclosed like “fountains.”

But insuperable difficulties, in the process of the diluvial operations, must result to the subject from confining “*the fountains of the great deep,*” to the *sea*. It is manifest that the “windows of heaven,” with “the fountains of the great deep,” supplied all the waters which drowned the world. If then we confine “*the fountains of the deep*” to the *sea*; it will follow that the “*windows of heaven,*” *and the sea,* supplied *all that water*. The consequences then of this supposition would be

(1.) That the sea would need a supply of water as well as the land, to keep up the equilibrium; and there-

fore the sea could afford no water adequate to the demand.ⁿ Or,

(2.) We must suppose that some pressure upon the surface of the sea forced the water out of its bed, which was left empty, while its water went to cover the hills.

But this hypothesis would introduce the unphilosophical notion, which I believe is now universally exploded, that a comparatively thin covering of water was miraculously spread over every part of the earth and the mountains, and sustained there till the flood abated.

This however, was certainly neither the mode of the *advancing* or *retiring* waters. For “the waters increased and *bare up the ark*” and “the *ark* went upon the *face* (floated upon the surface) *of the waters*,” as any other vessel might, by providential guidance. But nothing could possibly ride or swim upon the surface of these waters whose declivity must, on the above hypothesis, have been as steep as the mountain sides themselves.

ⁿ “Adequate to the demand.” If we allow the sea to be *twice* the area of the dry land, and that Buffon is correct in supposing the sea to be on an average one fourth of a mile deep, we shall perceive that the waters of the sea, would, were they to be all spread over the land, flood it half a *mile* deep. But twenty-eight thousand feet, the alleged height of the snowy mountains, make more than five miles and a quarter. So that it would have required more than *ten seas* to deluge the land alone, equal to the height of Noah’s flood. But to elevate the *waters* of the *sea* to the same height, it would require in addition, *twice* the number of seas. The conclusion is, that the waters supplied at the deluge, by the rain, and the fountains of the deep, were, agreeably to the above historical, and scriptural data, more than equal to *thirty seas*. Were we to suppose the sea (as I believe Buffon does) to be *three times* the area of the land, the waters of the deluge would then require the amount of twenty-eight *seas*.

The circumstance which we observed when considering the state of the creation, viz. that the *waters originally covered the tops of the mountains*, makes it very natural, and easy to conceive how, at the Almighty's command, the waters which covered the mountains at their first creation might, when brought from their retirements, readily cover the mountains again, at the Deluge. THUS every circumstance appears to be consistent ; and, both insuperable, difficulties, and *unnecessary* creations of water for the purposes of the *deluge*, are avoided.

It would be unreasonable to object here, that the whole process being *miraculous* we cannot say how God might sustain the ark even upon *steep declivities* of water ; for we might as well state an objection to the ark altogether, and assert that God could have preserved these *creatures* by *miracle* as well without the *ark* as with it. But as the all-wise God works no superfluous miracles, and as the statement we have given above, from the Scriptures, needs no such miracles, we are bound both by philosophy and divinity to respect them.

Our two positions then are fully justified, I trust, beyond reasonable objection : Which positions are,
—That the waters of the flood were partly supplied from fountains under ground.

—And that the waters rose in *forty days*, and were nearly seven times as long in decreasing.

—And that if the snowy mountains be stated correctly at twenty-eight thousand feet high, each day, on an average would cover the earth *seven hundred feet deep in water*.

As however the valleys and low parts of the earth

occupy the smallest portion, they would be the soonest filled. And as the descending waters would naturally flow down the hills, I think it more than probable, if the waters commenced at an average, that the *first days* of the flood would increase at least *a thousand feet per day!*

What a scene of terrific and awful desolation, does this narrative of the Bible convey! If the reader be affected as the writer was, when he first contemplated the scriptural character of this dread transaction, he will literally tremble when he meditates on this awful catastrophe.—He will moreover discover, how inadequate, how puerile, and infinitely below the fact of the real case, are all those representations of the deluge to which we have been accustomed; and those comments which exhibit animals and men as *escaping* to the highest grounds and hills, as the flood advanced. Even Mr. Buckland supposes that animals, when the waters began to enter their caves under ground, might have “rushed out and fled for safety to the hills.” (Dil. p. 38)

The impossibility of any such escape may be immediately seen. Neither man nor beast under such circumstances could either advance or flee, to any distance. Any animal found in the plain when the flood began would, thus, be merged in water seven or eight feet deep in a quarter of an hour! independent of the overwhelming torrents dashing upon his head.° And were he to attempt advancing up the rising grounds, a cataract of sheet water several feet

° The reader will find that seven hundred feet per day make more than seven feet in a quarter of an hour. And one thousand would make more than ten feet in the same time.

deep would be gushing all the way in his face, besides impending water spouts from the "flood gates" of heaven, momentarily bursting over him; he would instantly become a prey, to those "mighty waters."

We must now leave the further bearing of this subject; viz. *the deductive evidence which the deluge affords against the theory of Geology*, till we have more fully laid open the character of Geology, and the evidence upon which it professes to stand. The reader must however bear in mind the two facts of natural history with which the Bible has here furnished us: viz.

1. That animals were not created carnivorous.
2. That the diluvial waters issued partly out of the ground;—that they rose seven times as fast as they declined; and that they rose (probably) seven hundred feet per day.

MODERN GEOLOGY.

BOOK II.

CHAPTER I.

THE CHARACTER AND EVIDENCE OF THE SYSTEM OF
MODERN GEOLOGY, WITH RULES AND PRELIMINARY
REMARKS.

I CHOOSE, here, rather to denominate this the system of “*modern Geology*,” than simply the system of *M. Cuvier*; for though he may be considered as standing at the head of its present advocates, the reception of this Theory is become pretty general among our *English* Geologists;—from whom, on account of their intimate connexion with the seats of science and of religion, we have reason to apprehend great evils may arise to the young and inexperienced, by the uncontrolled process of so antisciptural a scheme.

As we have amply and I hope satisfactorily shewn the absolute inconsistency of the modern geological Theory with the Word of God, the reader will naturally be

anxious to know by what specious evidence it has gained such credit in the world, and what is the ground of that pretension by which it claims our credence in defiance of the plain declarations of the Most High. And very possibly *some* may even suspect that its pretensions are but too well founded.—These we must now proceed to examine.

It will be remembered that the ESSENCE of this system is, *that there have been numerous revolutions in our globe at very distant periods,—even “thousands of ages” before the creation of Adam, or the existence of the human race.*

The EVIDENCE of these numerous and distant revolutions, which forms the subject of our present consideration, appears by what we can gather from the indistinct mode in which Geologists have framed their system, to be *two-fold*; viz. FOSSIL and PHYSICAL.

The FOSSILS embrace whatever of *animal* or *vegetable* existence, is found imbedded in the strata.

The PHYSICAL department comprises the *nature* and located *situation* of the strata themselves.

The former includes *fossil shells, fishes, fowls, and animals.*

The latter, includes not only the *chemical* properties of the strata, but the exterior *form, magnitude, and relative situation* of each stratum in succession.

The reader, however, must be informed that though the *physical* state of the earth's strata, is perpetually resorted to by modern Geologists as *evidence* of numerous revolutions, it is not viewed as an *original, primary, and independent* source of evidence. But as

evidence which is made available only from the *fossils* which are found in the strata. For even M. Cuvier himself, very distinctly admits, or rather indeed contends, that the "*extraneous fossils*" are not only the *primary* evidence, which suggest the idea of *successive* formations, but that they, *alone*, afford the evidence which demonstrates this succession.

"The importance (says this Author) of investigating "the relation of extraneous fossils with the strata in "which they are contained, is quite obvious. It is to "them alone that we owe the commencement even "of a Theory of the earth; as but for them we could "never have suspected that there had existed any "successive epochs in the formation of our earth, and "a series of different and consecutive operations in "reducing it to its present state.—It is only by means "of analogy, that we have been able to extend to the "primitive formations, the same conclusions which "are furnished directly for the secondary formations "by the extraneous fossils; and if there had only "existed formations or strata in which there were no "extraneous fossils, it could never have been asserted "that these several formations had not been simulta- "neous." (Theory 55, 56.)

Hence then we perceive that these *two* sources of evidence are reduced to *one*; and that "*extraneous fossils*" "*ALONE*" afford even the *suspicion* of "*SUCCESSIVE EPOCHS*" in the formations.—It is, moreover, manifest that the "*analogy*" which Geologists extend from the "*secondary*" to the "*primitive formations*" is altogether fallacious and erroneous. For analogy can afford no evidence any further than it

applies. But the *sole* evidence of “*successive epochs*” arises, we see, from “*extraneous fossils* :” take away then, “extraneous fossils,” and all evidence is gone ; “as, but for them we could never have suspected that “there had existed successive epochs in the formation “of our earth.” If then we assert that there were “successive epochs” in the “*primitive formations*” which are destitute of “extraneous fossils”—the only evidence of “successive epochs”—we assert without evidence, we argue without reason, and we build without a foundation.

It is *here*, if I mistake not, that modern Geologists, commence the *fallacy* of their system. They have contrived to smuggle in along with real evidence the contraband testimony of exotic and illicit productions. By the illusion of this *false analogy*,—by the liberty which they take in drawing conclusions from strata which are destitute of the only evidence which warrants those conclusions,—they have undertaken to establish a claim by which they judge of the relative antiquity of formations from their situation, composition and appearance. If however M. Cuvier’s principles (above quoted) have the least correctness in them, which doubtless they have, Geologists have no authority to make any general conclusions but from “*extraneous fossils*.”

As, however, I conceive a great deal of very satisfactory evidence may be derived from the *physical* character of the strata which will apply directly against numerous successive epochs in formation, we must hereafter make the **PHYSICAL** *state of the strata* a particular subject of discussion. In the mean-time we

must attend to the evidence of this system which is derived from "*fossil remains.*"

Under the consideration of the revolutions arising from the evidences of extraneous fossils, M. Cuvier advances TWO SYSTEMS of fossils bearing testimony to these revolutions. These two different systems are pretty much considered apart by our author. The first system consists chiefly of FOSSIL SHELLS — the second, chiefly of LAND QUADRUPEDS.

I. FOSSIL SHELLS.

M. Cuvier adduces as the "*first proofs of revolutions on the surface of the globe,*" the "innumerable marine productions" which are found in "the lowest and most level parts of the earth," as well as in the "hills to a great height." (8.) It cannot be denied that the numerous *shells* and *marine* productions almost every where imbedded in the earth, are evidences that the sea has sometime or other, overflowed or rested upon the land. The *Bible* however informs us of an universal catastrophe of the kind which would naturally account for marine productions upon the land. M. Cuvier is perfectly aware of this, and is provided with an answer; namely, the large *quantity* of the fossil remains, and the *solidity* of the strata in which they are imbedded. (p. 9.)

Here Mr. Buckland unites in opinion with M. Cuvier, and considers the strata which contain fossil remains vastly too large and deep to have been formed by the operations of the Deluge. He estimates their perpendicular depth at little less than "two miles." As however, neither of these authors professes to demonstrate the utmost powers of the action of the Deluge,

their *assertions* on this matter are mere *opinion*, which proves nothing.—M. Cuvier however thinks that he has produced evidence of *more* revolutions than one.

1. His first evidence of “*revolutions*” is taken from the difference in the “*species*” of the *fossil shells*.

“The traces (he assures us) of revolutions become
“ more apparent and decisive the nearer we approach
“ to the foot of the great chains of mountains. There
“ are still found many beds of shells ; some of these are
“ even larger and more solid ; the shells are quite as
“ numerous and as entirely preserved ; but they are not
“ of the same species with those that are found in the
“ less elevated regions.” (p. 9.)

2. M. Cuvier, next affords us, “proofs that such revolutions have been *numerous*.” He proceeds thus.

“If we institute a more detailed comparison between the various strata and those remains of animals which they contain, we shall soon discover still more numerous differences among them, indicating a proportional number of changes in their condition. The sea has not always deposited stony substances of the same kind. It has observed a regular succession as to the nature of its deposits ; the more ancient the strata are, so much the more uniform and extensive are they ; and the more recent they are, the more limited are they, and the more variation is observed in them at short distances. Thus the great catastrophes which have produced revolutions in the basin of the sea, were preceded, accompanied, and followed by changes in the nature of the fluid and of the substances which it held in solution ; and when the surface of the seas came to be divided by islands

“and projecting ridges, different changes took place
“in every separate basin.” (p. p. 12—14)

Amidst these changes in the general fluid, it must
“have been almost impossible for the same kind of
“animals to continue to live:—nor did they do so in
“fact. Their species and even their genera change
“with the strata.”

It must be admitted that we have now before us the
very life and essence of the modern geological theory.
A *portion* of the above reasoning, viz. that which res-
pects the “*regular succession*” of “*stony substances*”
which the sea is here alleged to have “*deposited,*” and
which it previously “*held in solution;*” and that which
relates to “*islands and projecting ridges*” causing dif-
ferent basins in the sea; must be reserved principally
for consideration under the *physical* state of the strata.
—But the “*fossil*” portion of the above document must
be somewhat closely attended to. Here we learn
that

1. “*The species and even the genera change with the
strata.*” — The consequence then will be that the
“*changes*” in the “*fossil remains,*” even in the
“*genera,*” will be as numerous as the “*strata*” “*with*”
which they “*change.*”

2. “*The strata*” change with the “*fluid,*” the
“*fluid*” changes with the “*revolutions in the basin of
the sea,*” and the “*revolutions*” vary with the “*catas-
trophes*” which “*produced*” them.—Thus the “*catas-
trophes and revolutions*” must have been equally nu-
merous with the “*strata*” and with the changes in the
fossil remains.

3. “It must have been almost impossible for the

same kind of animals to continue to live amidst these changes in the general fluid;" "nor did they do so in fact. Their species and even their genera change with the strata."

This is most extraordinary indeed. If changes in the "*fluid*" of the sea were such as rendered it next to "impossible" for different species of fishes, to live in it, the *change* in the *nature* of the *sea water*, must have been such as we never heard of, and of which we can form no conception! If moreover *fishes* differed so much from each other that one species could live and thrive in *water* which deposited *one* stratum, but could not live in the water which deposited the succeeding stratum, how extraordinary must have been the difference of the *nature* of such *fishes*!—How extraordinarily also must the *strata* differ from each other, the contents of which when dissolved in the fluid rendered it unfit for the support of *all* fish but its own!!!

The "*regular succession*" which this system professes to establish, and which indeed is necessary to its existence, is not confined to the "*strata*" but is extended to the *fossils*. "Their species and even their genera change *with the strata*." And by "regular" succession we are to understand, a regular series in the advancement of animal nature, from the "most simple animals" which are found in the lowest formation, to the more perfect by which they are succeeded: and ultimately to "quadrupeds" which only appear in the "newest formations." (Theory p. 356.)

Mr. Jameson in his preface to this Theory adopts the same notion. He informs us that the fossil kingdom shews the Geologist—"the commencement of the

“ formation of organic beings,—it points the gradual
 “ succession in the formation of animals, from the al-
 “ most primeval coral near the primitive strata, through
 “ all the wonderful variety of form and structure ob-
 “ served in shells, fishes, amphibious animals, and birds,
 “ to the perfect quadruped of the alluvial land ;—He
 “ discovers that there is a whole system of animals in
 “ a fossil state different from the present.” (p. 7.)

Our English Geologists likewise adopt the system
 “ That certain fossils are peculiar to and are only
 “ found in, particular strata ;” and that (Geologists
 have) “ ascertained the constancy in the order of super-
 “ position, and the continuity in the strata of our
 “ island.”^b

We cannot stop to notice the different views which
 different Geologists may advocate relative to the parti-
 cular bearings of the aforesaid succession, whether they
 be followers of *Werner* or of *Hutton*, or a class between
 the two. It is enough for us to know what is essential
 to this “ *Theory*,” and what it must of necessity in-
 clude in order to answer the end of its adoption:
 Which end is this—

MODERN GEOLOGISTS ENGAGE TO PROVE NU-
 MEROUS EPOCHS AND “ REVOLUTIONS” IN THE
 EARTH BEFORE THE EXISTENCE OF THE HUMAN
 RACE, FROM THE “ REGULAR SUCCESSION” WHICH
 THEY CONCEIVE TO EXIST BOTH IN THE “ SUPER-
 POSITION OF THE STRATA,” AND IN THE FOSSIL
 REMAINS WHICH THE STRATA CONTAIN.

Whether any Theory could be conceived which

^b Geol. Trans. Vol. 1. p. 325. quoted in Phillips' Introduction. p. 5.

should, from its arrangements and contents, be able to prove satisfactorily the above position, I need not here inquire. It is however demonstrably evident that the proof of numerous epochs and revolutions must absolutely and utterly fail, unless a variety of particulars are found to take place.—There are *two* genuine propositions involved here, each of which includes a great variety of particulars, which must be positively proved by this Theory, before it can pretend to assert its claim to our confidence.

I. The physical operations in the strata which the assumed revolutions involve, must be consistent with “physical and chemical science.”

II. The evidence of these revolutions arising from the strata and fossil remains, must be so regular, consistent, and uniform, as to admit of no reasonable objection.

The attentive reader will perceive that for the present we must lay aside our appeal to *scriptural* testimony, and try Geology upon its own avowed principles; viz. “*physical and chemical science.*” By these we shall most gladly abide, though we cannot in this place attend minutely to the nature and evidence of *the physical* part of this subject, we must introduce so much of their character as will give the reader a just idea of the situation into which these Geologists are brought by the adoption of their Theory.

If, agreeably to the statements which the foregoing quotations supply, we are to admit numerous revolutions upon the evidence of the “*extraneous fossils,*” it is plain that both the “*fossils*” and the “*strata*”

inclosing the fossils, must be regular, uniform, and universal. They must also be intelligible, well described, and unambiguous.—We must lay down a set of RULES, or, in other words, AXIOMS by which we may judge of the validity of the *evidence* which our authors produce.

RULES.

If we do not bring the evidence afforded by Geology to the same test by which every other *science* or system is tried, we may say any thing we please, and call it proved; but truth will not thereby be elicited.—Our *first rule* shall be applied to—

I. THE FOSSIL STRATA.

Before the *strata* can be allowed to force upon us any *general* conclusions as to the relative epochs of their formation, it is quite obvious that they must be proved to be,

1. *Distinct in their character.*

By this I mean that they must be so specific and peculiar in their composition and appearance as to be distinctly known and ascertained by NAME and NATURE.

2. *Distinct in their situation.*

Their situation must be regular and uniform with respect to the accompanying strata. They must have uniformly, the same strata beneath and above themselves. That is, the strata which are found beneath in one place must be beneath in all places; and so of the strata above.—Any deviations from this *order* must be only such as may be accounted for consis-

tently with the "regular succession" of the strata.

3. *Their extent.*

The extent of the strata which is to prove general, or rather universal catastrophes, must be itself equal to the extent of the catastrophes indicated by it. To speak of strata proving general revolutions throughout the earth, which strata themselves are only of a local and circumscribed nature shews a total failure in the nature of the evidence resorted to.

The language of the Geological Society, quoted two or three pages back implies as much as this. They say Geologists have "ascertained the *constancy* in the *order* of superposition, and the *continuity* in the strata of our Island."

II. THE FOSSIL REMAINS.

The "extraneous fossils" or "fossil remains" found in the strata are the sole indications, as we have seen, of the numerous revolutions in the strata, which the modern geological Theory assumes to have taken place. And the indications, we have further seen, arise from this circumstance,—"*Their species* and even their *genera*, change with the strata."—It appears further that these genera and species begin with the most inferior race of animals, and advance by regular gradation, from shells, fishes, amphibious reptiles, birds, and so up to quadrupeds. *These* last however we shall find are also distinguished among themselves, and form the most decisive evidence of numerous revolutions.

This Theory, we have seen, (p. 180.) asserts "that certain fossils are peculiar to, and only found in particular strata." And that the fossils change with the

strata and denote the successive strata and epochs of formation. The same authority declares,

“That exactly similar fossils are found in different parts of the same stratum, not only where it traverses this Island, but where it appears again on the opposite coast.” (Id. p. 13.)

Tis plain therefore, if the species or genera are to prove regular successions by the disappearance of former species and the re-appearance of subsequent ones, that those species and genera must be *universal, exclusive, successive, non-recurrent*.

1. *Universal*.

By universal I mean that they must exist every where, in *every part of the world* where animals do exist, and where the strata to which they are peculiar, are found.

2. *Exclusive*.

That is, they *alone* must exist to the exclusion of every other animal. For if *other* animals are found in the same strata, those strata cannot be peculiar to certain animals only.

3. *Successive*.

That is not continuous,—not the same sort of fossils in successive strata;—but fossils of a different species or genus. This is the essence of the Theory.

4. *Non-recurrent*.

As they change with the strata and form with the strata a “regular succession” from the “lowest strata” upwards, the *lower* fossils must not appear again in any of the *upper* strata, for this would be more directly in violation of the Theory than even a continuous order; for the further we recede from the primitive

and early formations, the further we depart from the nature of the fossils contained in those formations.

The consequence of all this will necessarily be, that if there have been "numerous revolutions," as the Theory asserts, not only the "*species*" but even the "*genera*" imbedded in the *lowest strata*, will become extinct long before we arrive at the surface of the earth, and entirely new species and genera will appear. *This* however, is professedly a part of the system. The great rule of judgment in this matter is "*extinct*" "*animals.*"

III. THE MODE OF ASCERTAINING THE EVIDENCE.

It is obvious that the only mode of ascertaining the situation of the strata, and the nature of their contents, is by actual inspection and *examination*. The "Theory of the earth" pretends to no other way of coming at the necessary information. But it is also obvious that the *extent* of the examination must correspond with the extent of the Theory which is to be built upon it. For no man can raise a superstructure disproportioned to his foundation.

It is quite certain therefore that this Theory which professes to be a "*Theory of the EARTH,*" can never possibly arrive at any thing which deserves the character of "demonstration," of which these Geologists make such large boasting.

DEMONSTRATION of a general "*Theory of the earth*" obviously impossible.

That system which asserts that "certain fossils are peculiar to certain strata," commits itself upon the proof of these two points:

First. Positively ; a knowledge of the fossils which those strata *do* actually contain ; and,

Secondly. Negatively ; a knowledge of what they *do not* contain. Or, in other words, that the strata contain such fossils, and no others.

Now it is perfectly certain that no man can pronounce positively and truly what the strata *do not* contain, unless the strata have been examined every where throughout. But as no one pretends to any such examination, it is clear that the "Theory" is liable at all times, to be altogether ruined by the discovery of such fossils in the strata as are inconsistent with it.

For instance. If the fossil bones of a *human being*, or of a land *quadruped* of the existing races, were to be discovered in a genuine *limestone rock* which the Theory asserts to be occupied only by the *ancient fossils*, that discovery would be absolutely fatal to the whole Theory whenever such discovery should be made!

The very pretence therefore of "demonstration" in a case where its application is so manifestly absurd and impossible, seems to warn us that we must be content, so far as it respects *this Theory*, with the *profession* of demonstration, instead of demonstration itself. Few things can be more certain than that a general "Theory of the earth," which pronounces what the strata do and what they do not contain, is not only positively incapable of demonstration, but is indeed almost infinitely distant from it.

PROBABILITY is the highest attainment to which such a Theory can possibly arrive.

This *probability* however will be only in proportion to the scrutiny which has taken place, and been found correct.

—Before, then, this Theory can attain to any thing of the nature of *probability*, the quantity of the strata or the space of ground examined, must possess the THREE following characteristics. It must appear,

1. That a space sufficiently large has been examined, to warrant a probable opinion respecting the rest.
2. That the parts examined, correspond with the rest of the strata, so as to make them a fair specimen of the whole.
3. That those parts accurately exhibit such phenomena, and such only as the Theory requires.

It is perfectly obvious to the capacity of every reader that the parts of the strata which are known must, in order to afford a fair specimen, bear some proportion to the whole,—must correspond in character with the whole, or we can have no analogy,—must answer the demands of the Theory, minutely. For if the specimen by which we determine the rest, be itself refractory, how absurd to suppose that a general correct Theory can be proved by an erroneous specimen!

To each of these particulars we must pay attention. And I think we shall soon perceive that every one of these essential qualities, is defective or erroneous; and that it will be found,

—*That this Theory is built on insufficient information of the strata.*

—*That the correspondence of the strata is such as to preclude the possibility of proving the truth of the Theory.*

—*That even the little which is known of the strata affords positive evidence that the Theory is erroneous.*

If we succeed in the proof of these positions, a sufficient evidence I trust will be afforded that we have not commenced our examination of this popular Theory, upon light grounds, or pursued it under vague and unsupported assumptions.

In addition to all this, however, we must insist that this Theory is answerable for all the *consequences* which necessarily attach to its adoption. If it could be supposed *probable* as a Theory, it will involve difficulties which can never be surmounted. Such as—*physical* and *chemical* anomalies and impossibilities,—and *new creations*, after the disappearance of every species or genus, in order to furnish the successive races of animals of which the Theory speaks.—

We shall here recapitulate our RULES that they may be better borne in mind, because they are of very great importance to the due examination of the subject.

1. THE FOSSIL STRATA,—must be *distinct* both in their *nature* and *situation*; and of equal *extent* with the Theory.

2. THE FOSSIL REMAINS, must be *universal, exclusive, successive, and non-recurrent.*

3. IN THE MODE OF OBTAINING EVIDENCE; *Demonstration* is impossible.—*Probability* its highest attainment.

—Here—the *space* must be sufficiently *large.*

—The whole correspondent with the *parts examined.*

—The *result* must suit the *Theory.*

CHAPTER II.

THE EVIDENCE OF THE PHYSICAL AND SHELLY STRATA EXAMINED.

REQUESTING the reader to recollect the RULES which were laid down in the last chapter, as essential to an unprejudiced and impartial examination of the pretensions and merits of the modern geological "Theory," I shall without further delay proceed to its examination. This examination I feel assured will furnish us with proof that this Theory is essentially defective and erroneous both in the physical and fossil character of the strata. These we shall separately investigate.

THE PHYSICAL STRATA.

With respect to the physical nature of the strata we must attend to a variety of particulars.

I. THE SPACE EXAMINED.

It will be remembered that M. *Cuvier* professes to be the *founder* of this modern Theory, though he has, I believe, done little more than adopt the system of *Werner*.—Mr. *Buckland*, as we have already seen,

very highly extols M. Cuvier's Theory, and considers the *evidence* which he has adduced in proof of it, as both new and demonstrative.—The London *Geological Society* also, does not appear to advocate any new Theory of its own, but, like Mr. Buckland &c. &c. adopts and illustrates the Theory of M. Cuvier.

Hence it will appear that, whatever corroborative testimony may be adduced by modern English Geologists, in favour of the continental Theory, M. Cuvier, whose system leads and does not follow that evidence, could not build his Theory upon that evidence.—The Theory then as it originally came out of the hands of M. Cuvier to us, must be tried so far as *he* is concerned, by the *evidence* which he has produced: however I am perfectly willing to admit that the system, as a system, has a right to claim all the evidence which can be rendered friendly to its pretensions.

It might, however, be supposed that this most celebrated Author, who has gained such extensive credit to his "Theory" under the impression of unparalled talent and almost unbounded research, had actually made due and personal examination of "THE EARTH" of which he professes to give a "THEORY."—A Theory moreover, professedly built not upon any man's foundation, but upon his own personal merits and responsibility. I did myself, I candidly assure the reader, when I began to examine the Author's Theory, certainly suppose and believe that M. Cuvier had visited almost every *country* on the *globe*;—that he had actually descended into almost all the *coal pits*,—had scrutinized every important *mine*,—and had examined

nearly all the *stone-quarries in Europe*. And this was surely a natural and reasonable expectation.

What then will be the reader's astonishment when he learns that M. Cuvier has drawn the testimonies, by which he illustrates and confirms his "Theory of the earth," very greatly from the *quarries of Paris and its neighbourhood!*—Mr Jameson, M. Cuvier's translator and annotator writes respecting these quarries, as follows.

"In order to enable the reader to understand the various details in regard to the fossil remains discovered by Cuvier, we shall premise a short description of the mineralogy of Paris, as many of them were dug up in that neighbourhood." (p. 361.)

M. Cuvier himself writes respecting this point thus.

"The Essay on the mineral Geology of the environs of Paris, affords the most complete and satisfactory evidences of the principal facts and circumstances which I have endeavoured to establish in this discourse."——Yet even of this "*Essay*" he says "it has become almost the entire work of my friend" "M. Brogniart." (177, 8.)

Let the reader notice here that "*many*" of "*the most complete and satisfactory evidences*" of M. Cuvier's Theory were "dug up" in the "*environs of Paris.*"!!

It is moreover in evidence that M. Cuvier wrote his "Theory of the earth" not only without personal inspection, but even in almost total ignorance of most other parts of the globe; yea even of Italy which skirts the borders of France, and whose Appenines, down al-

most the "entire length" of the country, are most remarkable for "fossil remains."

"It would (he says) be of great importance to examine the other basins containing chalk formations—that these may be compared with those we found in the environs of Paris."

"*May* be compared!" What! have they *not* been compared! What! Build a "Theory of the EARTH" and not compare TWO BASINS!!!—He adds;

"I have only a very superficial knowledge of these lower hills of the Appenine chain, acquired in the course of a journey devoted to other objects; but I am of opinion that they contain the true secret of the last operations of the sea." (181.)

Nay our Author is even ignorant, and regrets the want of "a history of the gypsum quarries of Aix, in which, as well as in those of Paris, reptiles and fresh water fishes are found." (181.)

Besides; this writer goes on through a succession of pages, to lament the great ignorance in which the geological world lay, up to the moment in which he wrote. He mentions Jura, the Hartz, the Vosges, Black Forest,—Aix, Appenines, Po, and Arno, with

"Many other Strata, even celebrated for their extra-neous fossils:" besides Thuringia, Oeningen, Verona, (which we must hereafter notice,) Glarus, and Aichstadt. "All these desiderata have as yet received no satisfactory explanation in books of Geology." (p .179—182.)

What an extraordinary foundation upon which to raise a Theory of the earth!!—To what does this space amount?

Suppose this "Paris basin," which M. Cuvier has examined with the aid of his friend M. Brogniart, (as we learn that in one place it extends ten leagues by four, and in another, is thirty,) be estimated at fifty miles by sixty, and one third of the surface of the globe be allowed to be land; we shall, on calculation, find that the space personally investigated by M. Cuvier, falls short of a *twenty thousandth part* of the surface of the earth, on which he has built his "Theory"!!!— This, for the space examined.

II. THE NATURE OF THE EXAMINATION.

The investigation of Geologists generally is almost wholly confined to the external surface of rocks, to the inspection of stone quarries, to wells, and mines. M. Cuvier's comprised little more than the quarries around Paris, and which compose the stone on which that city is built. He speaks of

"The executions of our several researches and surveys;" and of "the most careful investigation." (p. 107, 178.)

But when we compare all this with the requisitions of a general "Theory of the earth," the whole amounts to almost nothing. We have supposed the Paris *basin*, not the *stone quarries*, to extend sixty miles in one direction and fifty in the other. This would make a surface comprising three thousand square miles. But how small a portion of this superficies has ever been actually "dug up" and examined to any depth! Some I perceive estimate these quarries at the depth of one hundred and fifty feet; and others consider the Paris basin to be, in its total depth, not less than five hundred feet.

If however we only suppose these quarries to be one hundred and twenty feet deep, and the houses to be sixty feet high, and that one tenth of the quarries is limestone fit for building, we shall see that the whole city might be built over every yard of its area, from a quarry not bigger than the city; allowing only the solid contents of one house to supply building stones for five houses.

But again. How long have these quarries been wrought? Part of them "has been quarried upwards of four hundred years for the excellent millstones it affords." (422.) But what sort of registers have been kept of the fossil bones discovered in them, and of their relative situation? And at the actual discovery of how many of these bones was M. Cuvier present? And how much of the strata has he actually seen turned over? Certainly almost next to nothing. It is really doubtful whether he could vouch for the contents of the strata subtended by one single acre of surface. And yet there are nearly two millions of acres in the three thousand square miles which we have supposed to be occupied by the Paris basin.

But it is, further, more than probable that not a thousandth part of the space we allow for the Paris basin has ever been "dug up" and investigated to the depth of five hundred feet, since authentic records have been made of its fossil depositories. Beyond a doubt, therefore, if we admit that M. Cuvier possesses *accurate information* of the real contents of a *one thousandth part* of these three thousand square miles, we make a liberal admission.

But what is the conclusion? These three thousand

square miles do not comprise a twenty thousandth part of the land on the earth's surface. And M. Cuvier is admitted to know one part in a thousand of this Paris basin, viz. of these three thousand square miles. The result then will be that our author has raised a "Theory of the earth" without possessing authentic information and certain knowledge, upon the most liberal allowance, of more than

ONE PART IN TWENTY MILLION OF THE FOSSIL STRATA ON THE SURFACE OF THE GLOBE.

If this however be the result on the supposition of the strata in the Paris basin being only a few hundred feet deep, what will be the conclusion when we consider that Mr. Buckland estimates their depth, in many places, at several thousand feet, and their extreme depth at not less than "*two miles*"!!!

III. DEFECT IN THE NATURE OF THE SPECIMEN.

The most extraordinary defect, and one which strikes us with astonishment, is, that the Paris basin, besides its diminutive character compared with the surface of the globe, is not a specimen of the "*fossil strata*" in general, even as far as it goes. Nor are the basins, called the Isle of Wight and the London basin, which our English Geologists endeavour to compare with the Paris basin. Nor is it even a defect in point of *physical depth* only of which I complain. But it is a defect in the nature of the strata which contain fossil remains.

And here we see the absolute necessity of abiding by acknowledged RULES in our examination of geological descriptions. None of the *basins* to which we

have alluded above, reach *lower* in the fossil strata, than the *chalk*. But the chalk, we shall find by refering back to M. Cuvier's plate or scale of the strata generally, is only the *fourth fossil stratum* from the surface, while he has given us *eleven* strata in that plate, containing fossil remains. There will be found then *seven* formations *beneath* the *chalk*, which embrace "extraneous fossils." And the lowest of these, called the "transition rocks" which M. Cuvier has classed under *one* formation, actually of itself comprises, according to Mr. Jameson, *nine* distinct formations, *four* of which have been discovered to contain fossil remains.

The fact is, according to the system of these Geologists themselves, these "*chalk basins*," and the one especially from which M. Cuvier has drawn great part of his specimens are among what they call "the newer flætz" formations: ¹ which flætz, or flat rocks, these authors themselves esteem to be of very modern date. Independent then of the *nine* transition rocks, we shall find in our authors own table, the old red sandstone,—the mountain limestone,—the coal formation,—the magnesian limestone,—the new red sandstone,—and the Jura limestone, all *below* the chalk, and *all* containing "*fossils*;" while the Paris formation is the *only one above* the chalk till we arrive at the alluvial or loose formations!!

With what propriety then can such a perfectly superficial and defective basin, be viewed as a *fair specimen* by which to judge of *all the fossil strata*!!!

¹ "The country in the environs of Paris is entirely composed of newer flætz rocks, of which the oldest, or lowest, is common chalk; the uppermost or newest, alluvial." (p. 403.)

IV. THE SPECIMEN PECULIAR.

What seems to be the most astonishing circumstance attending the fatality of this extraordinary *specimen* of the fossil strata is, it is itself peculiar; viz; it appears to be unlike every other chalk basin which has been examined. Neither the *strata* nor the “*fossil remains*” contained in the strata respectively, at all correspond. Of the fossils however we must not say much at present. And respecting the strata I shall only allude in this place, to a very few points out of many. I have already intimated that our English Geologists endeavour to make out two basins, which they also try to conform to this celebrated Paris basin. But with respect to the *existence* of basins at all, it is only *conjecture*: Mr. Jameson tells us that Mr. Webster “is of opinion, that two basins of chalk, filled with the “newer formations, occur in the southern parts of “England.” (p. 427, 8)

“Is of *opinion*”! What a foundation this upon which to build a system of philosophy! We shall in another place, I trust, prove the entire fallacy and absolute impossibility of any such thing as *stratified basins*. At present it will be enough to shew that, even admitting the fact of these basins, they do not answer the end of a genuine geological *specimen*, nor at all accord with the Paris basin.

1. *The strata disagree in number.*

We may observe that, in the Paris basin, the strata covering the *chalk* are *eleven* in number; while those in the London basin are only *six*.

IN THE PARIS BASIN, they number the strata thus;—chalk—plastic clay—coarse marine limestone

—silecious limestone—gypsum and marl, three layers
 —marine marl—sandstone and sand without shells—
 marine sandstone and sand—millstone without shells
 —flint and silecious limestone—alluvial deposition.
 (246.)

IN THE LONDON AND ISLE OF WIGHT BASINS, they arrange them as follows ; chalk—the lowest marine formation, including the plastic clay and sand, together with a particular clay, called the *London clay*—the lower fresh-water formation—the upper marine formation—the upper fresh-water formation—the alluvium. (429.)

But further. These *six* formations are ascribed to the London and Isle of Wight basins conjointly. But when we examine these two separately they do not at all agree between themselves, any more than with the Paris basin. For instance, they do not know that the *chalk* even *exists* in the neighbourhood of *London*, though London gives name to this chalk basin ; for wells have been sunk five hundred and thirty feet deep without reaching it. Again. The third and fourth formations in the Isle of Wight basin, do not occur in the London basin. At this rate, the Paris basin will comprise ELEVEN formations—the Isle of Wight SIX—and the London THREE, or, at most *four*!!! (446.)

2. *The strata disagree in nature and kind.*

This appears from what we have said above. But what makes these basins so singularly absurd and unnatural as specimens of a general “ Theory of the earth ” is, that the *most remarkable formations*, in each basin, are *absent* from the others. For instance.

(1.) The *Paris* basin does not possess the “ *London*

clay” formation. “In the Paris formation, there is no single rock possessing the same external character as those exhibited by the London clay.” (437.)

(2.) The *London* basin does not contain the “*coarse limestone* formation” of *Paris*. “In the English basins there occur but few rocks that can be identified with the coarse marine limestone of the Paris basin.” “With respect to the upper beds of the coarse limestone of France, no strata have as yet been discovered in England that correspond to them.” (437.)

(3.) Respecting that remarkable stratum, the “gypsum,” in the *Paris* basin, I can find *no stratum* corresponding with it in either the London or Isle of Wight basin.

I need not multiply any further anomalies in the *physical* character of the strata in these respective basins. More than enough has been already exhibited to demonstrate the absolute *failure* of this as a *specimen* upon which to establish a *general* “Theory of the earth.” We need only bring to recollection the RULES, which we have found essential to guide our judgment respecting the evidence which the geological state of the earth exhibits, to perceive instantly, that every important requisite is absent; and every point essential to a genuine Theory of the earth is violated.—To prove even a *probable* case, each stratum must be *extensive* as the Theory—must be regular as to its *situation*—and distinct and easily recognised, in its *nature*.

And as to the *specimen* by which this probability is to be shewn,—the space examined must be sufficiently extensive — that space must correspond with the

whole—and the result of this *specimen* must be suitable to the *Theory*.

Instead, however, of these essential requisites being here exhibited, they are every one absent.

—The *space* examined is a mere nothing. Yet

—The *different parts* of even this small space, totally *disagree* ;

—Therefore, the *Theory* is actually destroyed by its *own evidence*.

The physical portion, of this *Theory* we need not further pursue at present. We find it full of errors in every department. We shall find those errors multiply greatly while we examine the “fossil remains.”

NATURE OF THE SHELLY STRATA.

The evidence arising from the situation of the fossils in the strata is twofold—that arising from the “*fossil shells and fishes*,”—and that which is derived from the “*quadrupeds*.” The former only we shall examine here ; the latter must be particularly attended to in a subsequent chapter.

FOSSIL SHELLS AND FISHES.

I speak of fossil *shells* particularly, because fossil *fishes*, I perceive are little known and little capable of being understood and delineated. M. Cuvier, (Mr. Jameson informs us,) has paid but “little attention to this branch of Geology. He only enumerates in a very general way, the few genera met with in gypsum quarries around Paris. Five species are mentioned. The first described belongs to a new genus allied to that named *amia* and is conjectured to be a fresh-water

species. The second is nearly allied to two fresh-water genera, viz. the *mormyrus* of La Cèpede, natives of the river Nile, and the *pæcilia* of Block, natives of the fresh-waters of Carolina. The third appears to be a species of *sparus*, different from any of the present species. The fourth and fifth are very dubious.” (398.)

Let the reader here remember that in these *five* species of fishes, we have one belonging to a “*new genus*,” a second allied to those of *Egypt and America*, a third an *extinct* species, and the fourth and fifth of “*very dubious*” designation.

This is precisely the *reverse* of what this “Theory” requires. Its essential requisites are that the further the strata are from the modern formations, the further the *fossils* imbedded in them are from the existing races, and *vice versa*. The “Theory” then demands that the *fossil fishes* found in the Paris basin, the whole of which we have seen belongs to the “*newer flætz formations*,” should *all* approach nearly to the *existing* species, and to those residing in the neighbouring seas. But the whole of this is inverted in every part of it.—So much for fossil *fishes*.

With respect to petrifications generally and “*fossil shells*” in particular, we must observe that they do not correspond beneficially for this Theory, as they are delineated in the aforementioned respective basins. This Theory we must ever recollect requires that

“Their species and even their genera change with “the strata.” And that “in animal nature therefore “there has been a succession of changes corresponding “to those which have taken place in the chemical nature “of the fluid.” (12, 13, and 406.)

Here we find that "*genera*" change with the strata, and with the "*chemical nature of the fluid.*"

The above-mentioned basins exhibit phenomena however, utterly destructive of every pretence of Theory founded on the similarity of petrifications and of similar strata. There are *two* points in this connexion; namely, the want of conformity in the fossils of these basins with each other; and the non-conformity of fossils generally with the requirements of this Theory.

1. *Want of correspondence in these basins.*

If now we find these *basins* disagreeing in the nature of their "*fossil remains,*" it will be insanity to insist that the strata *generally* agree, when the different parts of the *specimen* from which we are to judge of the rest, do not agree. Then these basins are certainly fatal to the Theory; for both Mr. Webster and Mr. Jameson assure us, that so far are "*similar petrifications*" from being confined to "*similar strata,*" that strata which are as dissimilar as strata can well be, contain similar petrifications.

"The London clay (says Mr. Webster) contains the "same petrifications as the coarse limestone" "of the Paris basin." And Mr. Jameson adds; "The blue clay of London" "agrees in petrifications, and geognostic situation, with the lower beds of the coarse marine limestone of the Paris basin." (Cuv. pp. 437—447.)

Here then we find the "*same petrifications*" both in the "*blue clay*" and in the "*limestone rocks.*"—This surely would be death to any system, whose very essence lies in similar petrifications being found only

in similar strata. No ingenuity can possibly recover the standing of this subverted Theory. Even an attempt at such a design would be perfectly absurd: for we must in that case either assert that *similar* petrifications are *not* similar, or that *dissimilar* strata are *alike*, and that “*limestone*” and “*blue clay*” are the *same thing!!!*

2. *Want of correspondence with the Theory, in the general nature of the fossil remains.*

I shall only advert to two or three particulars, out of a mass of evidence now transcribed before me. For my great perplexity arises from the difficulty of selection and arrangement, and not from want of evidence, which is as positively pointed against this Theory, as evidence could be well desired.—We have lately remarked that the *extinct genus* and *species* in the Paris basin, which this Theory considers pretty modern, is the *reverse* of what the Theory itself requires.—We will now give another example in the opposite extreme, in application to the “*transition formation.*”

We must always take care to pin these Theorists down to their own genuine system, and keep it constantly in view. Otherwise we shall be beguiled by specious professions, instead of being instructed by facts and science. The gradual and regular change in the nature of the “*fossil remains,*” constantly receding further from present animals or known species the deeper we descend from the surface of the earth downwards, is the very soul of this Theory. It is M. Cuvier’s essential principle, that

“Their species, and even their genera, change with the strata. And—that they gradually disappear, till

“ they are not to be seen at all in the recent strata,
 “ still less in the existing seas, in which, indeed, we
 “ never discover their corresponding species, and
 “ where several even of their genera are not to be
 “ found ; that, on the contrary, the shells of the recent
 “ strata resemble, as it respects the genus, those which
 “ still exist in the sea ; and that in the last formed
 “ and loosest of the strata there are some species which
 “ the eye of the most expert naturalist cannot dis-
 “ tinguish from those which at present inhabit the
 “ ocean.” (13.)

Here the reader must forgive me for requesting his particular care in regard to the above statement of the modern geological Theory, because the whole business positively rests on this corner stone. If this gradually changing state of the “ fossil remains” should have some appearance of being supported by the phenomena of the strata, we have still such difficulties connected with it as must necessarily stagger any unprejudiced lover of truth and science. But if it appear that *fact* and *phenomena* are positively and directly in *contradiction* with the Theory, shall we hesitate a moment, out of deference to *names* and *pretensions*, to reject it? I shall here insert several species of evidence, each of which is destructive to the “ Theory.”

1. *The transition fossil remains.*

Professor Jameson thus remarks on the “ transition formations” which he states to be *nine* in number ; viz. greywacke, greywacke slate, clay slate, limestone, amygdaloid, syenite, porphyry, and granite. Four only of these are found to contain organic remains ; viz. the limestone, greywacke, greywacke slate, and clay

slate.—Respecting the fossil remains discovered in these rocks he makes the two following remarkable statements. These statements are made in his *notes* on M. Cuvier's Theory, which are given in explanation, and sometimes in correction of M. Cuvier's statements.

(1.) "It appears from the preceding statement, that in general the different species of transition rocks contain similar petrifications, and that they are principally distinguished by the number of corals and and orthoceratites imbedded in them." (340.)

(2.) "It is in general difficult to determine the species of these genera, owing to their being much intermixed with each other, and with the matter of the limestone. On a general view, they certainly approach in external characters to those corals we at present meet with in a living state in the tropical regions of the globe." (339.)

I must here make a few remarks.

—These "transition rocks," so called, are by all Geologists considered to be the most ancient of the secondary or fossil strata. M. Cuvier himself considers them to dip under the "horizontal strata," and esteems them to be the furthest removed of all the fossil strata, from the present state of things both on land and in the sea. They rest on the primitive rocks.

—Still we find these different strata—"limestone" "greywacke," and "clay slate," "in general" "contain similar petrifications."

—That they are difficult of a *particular* specification from their intermixture with each other and with the rocks. Yet

—That these distant and different strata contain petrifications which “*certainly approach*” in external characters to those which are found in a “*living state*” in the present sea.

This *fact* alone positively destroys this modern Theory in two respects. 1. It proves that the SUCCESSION or *change of “genera”* with the “STRATA” is a perfect dream. For here we have FOUR, and greatly DIFFERENT strata containing “SIMILAR PETRIFICATIONS.” 2. And all these “*petrifications*” are very like the “LIVING” FISHES!!!

2. *Edinburgh Encyclopædia, article “Organic Remains.”*

This testimony is very decisive, and I give it just as it is recorded, only taking the liberty to *number* the different branches of the statement to enable the reader to enter more easily into the distinctions. They apply very generally to the whole range of fossil strata.

1. “The lias of France, Spain, Italy, and England, “a stratum, or set of strata, well identified by their “position with regard to the red marl, contains different fossils in these several countries. 2. Echini “are found from primitive (Greywacke?) slate up to “chalk, as are Tollinæ, Turbines, and Chamæ. 3. “The Belemnite, which is common in the chalk of “France and Ireland, is rare in that of England; and “the fossils of the chalk of Maestricht are almost peculiar to it. 4. The vegetable remains that are found “in the clay of Sheppey do not occur in that stratum “in other parts of England. 5. Crocodiles, a fossil “not a little conspicuous, occur in the lias, in the “Portland Oolite, in the green sand of England, and

“ in the blue clay. 6. Crabs, which are found in one
 “ of the earlier secondary strata, to wit, the mountain
 “ limestone, also exist in the chalk, and in the London
 “ clay, as far asunder as they can well be. 7.
 “ Madreporites, Entomolites, Penticinities, Patellæ,
 “ Ostreæ, Amonitæ, Terebratulæ, Gryphites, Pectines,
 “ Anomiæ, and numerous others, which it is super-
 “ fluous to name, are nearly in all the strata; and so
 “ far is it from being true that there are even any pre-
 “ dominant (NB.) associations of these, that they occur
 “ intermixed in every possible manner.”

“ It seems, therefore, quite unnecessary to pursue
 “ this subject further; since it must be sufficiently
 “ plain that the evidence in question is worthless or
 “ worse.” (p. 754.)

The reader must not suffer himself to be deceived by the pretence that the above, and other instances, are true as it respects the *genera*, but not the *species*. He may assure himself that the whole is a fallacy. Both species and genera are declared by M. Cuvier to “ change with the strata.” *He* certainly has not, and cannot ascertain the species with any degree of precision. Every part of his Theory, therefore, is gratuitous and guesswork. Instead, therefore, of adding, as would be very easy, more testimonies against M. Cuvier’s Theory, I shall, lastly, produce the Author himself.

3. *M. Cuvier’s Theory destroyed by his own testimony.*

There are various points on which our Author’s own representations bear against his Theory. I shall here notice only a few.

(1.) M. Cuvier’s statement relative to “ *basins*.”

It is a part of his Theory respecting the progress of geological revolutions, that “when the surface of the sea came to be divided by islands and projecting ridges, different changes took place in every separate basin.” (12.)

“*Different changes in every separate basin.*” If these “different changes” do not include the *fossils* as well as the *strata*, the Theory is destroyed by its own absurdity. For its existence depends on the *fact* that “their species and even their genera change with the strata.” If these “different changes” do include the fossil remains, this Theory of the basins is quite ruinous to the general Theory. For if “DIFFERENT” changes take place in every basin, “*every basin*” will exhibit strata and fossil remains peculiarly ITS OWN. It is perfectly ridiculous therefore, to pretend to judge of the contents of *one* basin from what we discover in *another*. And *thus* we have seen the deception by the disagreement which we before witnessed respecting the anomalous character of the basins we examined, in which we became acquainted with the destructive fact that the “Paris limestone” contains the same sort of fossil remains with the “London clay”!!

(2.) The Author’s admission respecting the *recurrence* of the *same species*. M. Cuvier being perfectly aware that he could not support the broad and universal statements which his Theory required, endeavours to make his cause somewhat accordant with fact, by admitting that “the same species occasionally recur at small distances.” (13.)

This is truly destructive of the Theory. For they ought *never to "recur,"* even "*at small distances.*" But we have seen that they "occur" at *all distances*; and that the *lowest of all "certainly approach"* to *those still living.*

(3.) The Author's admissions respecting *admixtures.*

"If we examine with greater care (adds M. Cuvier) "these remains of organized bodies, we shall discover, "in the midst of the most ancient secondary strata, "other strata that are crowded with animal or vegetable "productions, which belong to the land or to fresh "water; and amongst the most recent strata, that is, "the strata which are nearest to the surface, there are "some of them in which land animals are buried "under heaps of marine productions." (14.)

This point will probably come under full discussion in treating of the *physical* impossibility of admixture and changes such as this Author's Theory here describes. In the meantime let the plainest understanding judge, (for common sense is here able to judge,) what possible chance any Theorist can have of framing a general "Theory of the Earth" out of a mass of such *mixtures and confusions.* Even the "*most ancient secondary strata,*" all of which this Theory considers to be productions of the SEA, have "in the midst" of them "strata that are crowded with animal and vegetable productions which belong to *land and fresh water*;" and the same of the "*strata nearest the surface,*"—No Theory surely can exist which requires a "*regular succession*" of strata with their peculiar fossil remains, under such a mass of confusion and absurdity!

(4.) M. Cuvier's resignation of the evidence arising from the "*shelly strata*."

The reader may perhaps stand in astonishment and confusion at the mention that our Theorist has actually, or at least virtually, deserted the SOLE EVIDENCE upon which he has *hitherto* been building the whole of his Theory. But so it is. He writes thus :

"The remains of shells certainly indicate that the sea has once ["once"! yes, at the Noahic deluge.] existed in the places where these collections have been formed. But the changes which have taken place in their species, when rigorously inquired into, may possibly be occasioned by slight changes in the nature of the fluid in which they were formed, or only in its temperature, and may even have arisen from other accidental causes."—Or "have been driven away—by other species or genera."—"Millions—may have been—buried—while their races may have been still preserved in the more peaceful parts of the sea." (58, 9.)

"As we are still very far from being acquainted with all the testaceous animals and fishes belonging to the sea, and as we probably remain ignorant of the greater part of those which live in the extensive deeps of the ocean, it is impossible to know, with any certainty, whether a species found in a fossil state may still exist somewhere alive." (60.)

The reader I trust will think that this is a most satisfactory conclusion of the evidence of the "SHELLY STRATA": And, that, not only does the evidence *fail* to prove the Theory, but is positively destructive of its existence ; and that ultimately, the Author him-

self declines resting his "*numerous revolutions*," upon their testimony ; and, almost in direct terms admits that the "*fossil shells*" prove but ONE REVOLUTION.

I know M. Cuvier deserts the testimony of "fossil shells," the anatomy of which he does not well understand, for the sake of "fossil *quadrupeds*" with whose structure he professes to be perfectly acquainted. Requesting the reader to bear in mind the various ways above admitted by M. Cuvier, in which the "species" may have been changed or moved from their places, we must proceed to the consideration of fossil quadrupeds.

CHAPTER III.

FOSSIL REMAINS OF QUADRUPEDS.

EXTINCT ANIMALS.

With respect to the shelly strata we have shewn in our last chapter, that their testimony is against, not for the modern system of Geology. We there endeavoured to prove that—The space examined was quite inadequate to the case of a “Theory of the earth”—That the examination was imperfect—And the result perfectly inconsistent with the Theory. We must now examine the case of quadrupeds, upon which M. Cuvier, *henceforth*, places nearly all his hope of success. In stating the value and importance of large animals above the shelly fossils, he makes the following remarks.

“In regard to quadrupeds, on the contrary, every thing is precise. The appearance of their bones in strata, and still more of their entire carcasses clearly establishes that the land in which they are found

“ must have been previously laid dry, or at least that
“ dry land must have existed in its immediate neigh-
“ bourhood. Their disappearance as certainly an-
“ nounces that this stratum must have been inundated,
“ or that the dry land had ceased to exist in that state.
“ It is from them, therefore, that we learn with per-
“ fect certainty the important fact of the repeated irrup-
“ tions of the sea upon the land, which the extraneous
“ fossils and other productions of marine origin could
“ not of themselves have proved; and by a careful
“ investigation of them, we may hope to ascertain the
“ number and epochs of those irruptions of the
“ sea.” (58, 59.)

The evidence by which M. Cuvier endeavours to establish the “*repeated* irruptions of the sea upon the land”, arises from the succession in which he supposes the fossil quadrupeds to lie in the respective strata. There is we are informed,

“ A determinate order observed in the disposition of
“ these bones in regard to each other, which indicates
“ a very remarkable succession in the appearance of
“ the different species.” (109.)

Comparative anatomy supplies our author with the means of ascertaining the different genera and species which the strata disclose.

“ Fortunately comparative anatomy, when thoroughly
“ understood, enables us to surmount all these diffi-
“ culties, as a careful application of its principles in-
“ structs us in the correspondence and dissimilarity of
“ the forms of organized bodies of different kinds, by
“ which each may be rigorously ascertained from

almost every fragment of its various parts and organs." (90.)

M. Cuvier considers this arduous matter so easy that he fears not to make even his reader to comprehend the mystery of this wonderful art.

"I shall unfold, (he says) the principles on which is founded the art of ascertaining these bones, or in other words of discovering a genus and of distinguishing a species by a single fragment of bone,—an art on the certainty of which depends that of the whole work." (5.)

After having discussed "the small probability of discovering new species of the large quadrupeds" in a living state, this Author thinks himself warranted in hazarding the following deduction from his previous statements.

"From all these considerations it may be safely concluded—that none of the large species of quadrupeds, whose remains are now found imbedded in regular rocky strata are at all similar to any of the known living species :—that this astonishing phenomenon has proceeded from general causes, and that the careful investigation of it affords one of the best means for discovering and explaining the nature of these causes." (87, 88.)

Before we examine the general subject of fossil quadrupeds, I shall just notice,

THE EXEMPLIFICATION OF THE AUTHOR'S RULES.

It may be of some importance to inquire a little how this extraordinary Theorist professes to arrive at con-

clusions which he informs us his predecessors in the line have missed. He exemplifies the rules of his art in their application to carnivorous and ruminant animals. And he informs us that it is by "this method alone that he has been guided" in ascertaining the character of fossil remains. "Every organized individual (he assures us) possesses an entire system of its own";—and that every carnivorous animal "must necessarily possess them combined together, as the species could not otherwise subsist". He proceeds,

"Thus, as I have elsewhere shewn, if the viscera of
"an animal be so organized as only to be fitted for the
"digestion of recent flesh, it is also requisite that the
"jaws should be so constructed as to fit them for de-
"vouring prey; the claws must be constructed for
"seizing it and tearing it to pieces; and teeth for cut-
"ting and dividing its flesh; the entire system of
"limbs—for pursuing", &c. (90—1.)

"Thus (he adds) commencing our investigation by
"a careful survey of one bone by itself, a person who
"is sufficiently master of the laws of organic structure,
"may, as it were, reconstruct the whole animal to
"which that bone had belonged." (95.)

He informs us, however, that these rules and principles are "not sufficient to guide us, unless assisted by observation and experience." And he cautions us that there are certain modifications in the structure of animals which may render their application difficult. He applies this art to "ruminant animals", telling us that they have "cloven hoofs"; and that they are "the only animals having that particular conformation". He goes on,

“ As all these relative conformations are constant
 “ and regular, we may lay down empirical rules on the
 “ subject, which are almost as certain as those deduced
 “ from rational principles, especially if established
 “ upon careful and repeated observation. Hence any
 “ one who observes merely the print of a cloven hoof,
 “ may conclude that it has been left by a ruminant
 “ animal, and regard the conclusion as equally certain
 “ with any others in physics or morals. Consequently
 “ this single foot-mark indicates to the observer the
 “ forms of the teeth, of the jaws, of the vertibræ, of all
 “ the leg bones, thighs, shoulders, and of the trunk of
 “ the body of the animal which left the mark. It is
 “ much surer than all the marks of Zadig.” (89, 90.)

Here I would offer a remark or two.

1. *Respecting “ carnivorous animals.”*

We might ask ; how a person is to know when the
 “ *viscera* of an animal” are so “ organized as *only* to
 be fitted for the digestion of *recent flesh*”? Few per-
 sons I should hope, not biased by theory and specu-
 lation would ever attempt to impose upon mankind
 by pretending that they possessed the art of making
 such discoveries.

But in point of *fact*, do not this Author’s rules ac-
 tually deceive us as it respects the natural history of
 animals? A clerical friend of the Writer of this
 Treatise instantly suggested, on reading M. Cuvier’s
 rules, that they violated the most obvious principles of
 our early instruction. And that with regard to “ car-
 nivorous animals”, the whole *dog tribe*, including
 wolves and *hyenas*, have obviously no “ claws” pecu-
 liarly constructed “ for *seizing* and *tearing* their prey.”

Yet the reader ought particularly to notice that the very essence of Mr. Buckland's history of the Kirkdale Cave, turns almost entirely upon the peculiarly "carnivorous" habits of the "*hyæna*"!!

2. *Ruminant animals.*

With respect to any one being "certain", on beholding "merely the print of a cloven hoof", "that it has been left by a *ruminant* animal", every farmer's boy would have taught us better. And that *Moses*, whom M. Cuvier's system tends to accuse of unusual ignorance and error, can correct this celebrated Author in the application of the first principles of his peculiar science. It is quite incorrect to say that ruminants are "the *only* animals having" "cloven hoofs:" For *Moses* informs us, from the mouth of an infallible instructor, that,—“The *swine*, though he divide the hoof and be *cloven-footed*, yet he *cheweth not the cud*”! (Levit. xi. 7.)

Horses, moreover, are an exception to another of M. Cuvier's rules; for they are non-ruminant animals, yet are not "their phalanges less enveloped in the hoof" than those of the ox or the deer. (100.)

I shall leave the reader here to make his own reflections, only asking him one question.—Can an Author so obviously incautious as M. Cuvier unquestionably is, in the very first principles of his instruction, be a safe guide to follow in matters not only affecting the foundation of geological *science*, but, by consequence, the truth of the *word of God*?

Imperfect, however, or erroneous as M. Cuvier's Rules may be, he assures his reader that it is by "this

method alone” that he himself has been guided in his researches. And he tells us thus ;

“ It is in this manner that we have determined and “ classified the remains of nearly a hundred mam-
“ miferous animals or oviparous quadrupeds.”

Of these “ hundred” different animals he is confident nearly *forty genera* and *seventy species* are “ most assuredly hitherto unknown, to naturalists”— that *eleven* or *twelve* are known and the rest (say twenty species) rather doubtful, but resemble the “ known.”—The animals which M. Cuvier examined, are about one-fourth oviparous quadrupeds, and three-fourths mammiferous. And the greater portion of these last are not ruminant. (103—4.)

Now the subject comes before us in its real character. M. Cuvier **proves revolutions** from the extinct animals, and **proves animals** to be extinct from his skill in comparative anatomy. The whole Theory first and last, now, (as we have seen,) the Author has relinquished his pretensions arising from the “ shelly strata”, rests upon the subject of extinct animals in the fossil strata. It is evident, however, that before our Author can make his skill at all available for the purposes of his modern Theory he must demonstrate many points of great responsibility. He must prove

—That the animals are *really extinct*.

—That they became extinct *in succession*.

—That the periods of their extinction were *before* the creation of *man* and of *existing animals*.

Each of these points involves a vast variety of particulars. And these particulars must be made out by our Geologists before their Theory can obtain even

the semblance of probability. A few of these particulars I shall bring to the readers notice, arranging them under several distinct heads.

1. Extinct animals.
2. The situation of animals in the fossil strata.
3. The Author's admissions as to their uncertainty.

With respect to these fundamental positions, each of them must be proved with all the minor branches connected with it, or nothing is done. The peril of this system must be evidently very great, because it is suspended by a long chain of facts difficult of proof, and almost all of a negative character. The nature of this chain is such that not one link is capable of positive demonstration. And every part of it is always liable to absolute failure by discoveries which are inconsistent with its existence.

EXTINCT ANIMALS.

The whole foundation of modern Geology, consisting in numerous revolutions prior to the existence of the "human race", and of the present orders of living animals, lies in the proof that animals have become successively extinct at different and regular epochs before the creation which is recorded by Moses in the Bible. Now this notion of extinct animals arises from the assumption that it may be, and, to the Supporters of this Theory, is known how far the *size* and *form* of the bones of animals may differ without indicating them to be of different species; and that when the bones deviate further than such an ascertained point,

they do indicate and prove that such bones belonged to a different species or genus of animals.

I shall not, of course, pretend to discuss this point as a subject of science: but I would observe that, as all the *rules*^k by which a genus or a species is known are entirely framed by man, we have no certain knowledge of the utmost extent by which the deviation of animals are bounded; nor are we sure how far animals derived from the same progenitors, may deviate by time, food, and situation. If, moreover by a tenacious adherence to the rules which we have arbitrarily adopted, we are forced into the admission of far greater deviations from the natural course of things, than the deviations which we seek to avoid by adopting those rules, we violate the very principle on which we profess to build, and make deviations by seeking to avoid them.

Having made these preliminary remarks, I must observe that before our author can be allowed to have laid the very first stone of his building, he must prove, not assume the thing as a probability,

I. That no such animals as those of which he has examined the remains and pronounced extinct, are *now living* upon earth.

^k “The—flying opossum, with the hairy and spinous duck-billed animals denominated *ornithorynchus* and *echidna*, have astonished Zoologists by presenting new and strange conformations, contrary to all former rules, and incapable of being reduced under any of the former systems.” (63.)

I might here observe that as a large proportion of these forty genera and seventy species which are declared to be unknown, or extinct, animals, were derived from the Paris basin which is probably not a ten-thousandth part of the earth's surface, we may reasonably expect, from analogy, that many *hundreds* of *extinct* species may hereafter be discovered in the earth.—The vast number, however, of animals asserted to have become extinct affords, of itself, a strong presumption that *fallacy* has somewhere entered into the calculation.

II. That the bones which he says belonged to extinct animals *could not* have varied so much from their progenitors by climate, food, or situation, in the course of four or five thousand years.

The *time* and *place* of these assumed extinct animals must be examined in another place. What we are here to inquire into is the mere fact—are animals really extinct, or have they deviated from their kind? I shall try to be as brief as possible, but the matter, in its numerous ramifications, is very abundant. There are many difficulties starting up before us. We shall confine ourselves to a few.

I. THE AUTHOR'S RULES FORCE HIM INTO INCONGRUITIES.

We have already observed that M. Cuvier has been guilty of various anomalies in the application of his rules. But they have actually led him to adopt false modes of judging respecting the species of animals and their deviations from a common stock. As I am writing in a Christian land I must in this place resort to *Scriptural testimony*.

1. *Respecting carnivorous animals.*

Upon the nature of these animals both M. Cuvier and Mr. Buckland, very much depend. But I hold it clear even to demonstration, allowing the account of Moses to be correct, that the *hypothesis* upon which M. Cuvier builds, is erroneous. We before proved from the Bible, that animals were *not created carnivorous*, and that they actually lived for twelve months in the Ark, on *vegetable* food only. Carnivorous animals have, therefore, degenerated into their present habit; but, it is more than probable they could, even now, be

brought gradually to live on vegetable food again. This circumstance alone, I think, will weigh far more with every well informed christian reader, than the rules of M. Cuvier, by which he expects (like some ancient *Augur*) to foretel the shape and character of the animal by an inspection of its “*viscera*.”

The whole *philosophy* of this subject is built on a false foundation. The Scriptures alone have unfolded this secret. It was not *natural* to the earth to bear “*thorns and thistles* :” It was not natural to animals to eat one another. They have both departed from their original tendencies from their connexion with the “*human race*.” The cause was a *moral* one—man departed from his allegiance to his Maker—and from that period, the whole world degenerated.

2. *Different races of human beings.*

M. Cuvier, in pursuit of the Rules by which he judges of different *species* in the fossil bones of animals has been led to adopt some not very intelligible notions respecting different races of men now inhabiting the globe. The Tartars and the Negroes are both noticed by this Author as different races of men from the rest of mankind. And he considers that from the Tartars we are to learn the traces of a true history of the Deluge.

“ In order (he observes) to recover some truly historical traces of the last grand *cataclysm*, or universal deluge, we must go beyond the vast deserts of Tartary, where in the north-coast of our ancient continent, we meet with a race of men differing entirely from us, as much in their manners and customs, as as they do in their form and constitution—Their yellow

“skins, high cheek bones, narrow and oblique eyes,
 “and thinly scattered beards, give them an appearance
 “so entirely different from us, that one is almost
 “tempted to suspect that their ancestors and ours had
 “escaped from the last grand catastrophe at two diffe-
 “rent sides.” (162.)

“The Negroes, the most degraded race among men,
 “whose form approaches nearest to the inferior ani-
 “mals, and whose intellect has not yet arrived at the
 “establishment of any regular form of Government—
 “have preserved no annals.—Yet even the circum-
 “stances of their character clearly evince that they
 “also have escaped from the last grand catastrophe,
 “perhaps by another route than the races of the
 “Caucasian and Altaic chains, from whom perhaps
 “they have been long separated before the epoch of
 “that catastrophe.” (167.)

Both the above passages occur *twice* in M. Cuvier’s book, *perhaps from mistake in transcribing*. (237 and 241.)

There are *two* facts contravened in the above passages which we, who *believe* our Bible, know to be true and correct. The one, is the *historical* fact that there was only *one* mode of escape from the universal Deluge, and *that* mode by the *Ark*. The other is a fact in *natural history*, respecting which M. Cuvier’s *rules* have led him into error. That fact is, that whatever variations there may be among the different races of mankind those variations have been produced *since* the general Deluge, and not *during* unknown ages prior to that event. — The *fact* however, that *mankind* have actually deviated from their ances-

tors, and from each other *since* the Deluge, *essentially more* than the system of M. Cuvier admits of, is indeed very important. Because if he misjudges respecting man he may also misjudge respecting animals.

II. THE DEVIATION AND TRANSPORTATION OF ANIMALS.

Not only does the Divine record enable us to correct the mistaken philosophy of M. Cuvier respecting the human race, but it gives us infallible data by which to come to some very momentous conclusions respecting the natural history of animals, relative to which modern Geology would lead us astray. I cannot in this place enter into all the minute branches of this subject. But Mr. Buckland, as well as M. Cuvier, considers it a point demonstrated, that animals are become extinct, and become so either before or at the Deluge. The *evidence* of these epochs, we must hereafter examine. But there are certain positions relative to the deviation or extinction of animals in different places, *since* the Deluge to which we must here attend.

It appears from natural history, and is admitted by M. Cuvier, that there are numerous animals now living which are *peculiar* to certain countries, as Asia, Africa, New Holland and America. M. Cuvier enumerates, in New Holland, “the genera of *kangaroo*, *phascolama*, *dasyurus*, *peramela*, *flying-phalangers*, *echida*, and *ornithorynchus* ;” all of which with their different species, are *only* found in that country. (126.)

“It is true, that—upon discovering countries which
“are isolated from the rest of the world, the animals
“they contain of the class of quadrupeds were found

“entirely different from those which existed in other countries. Thus, when the Spaniards first penetrated into South America, they did not find it to contain a single quadruped exactly the same with those of Europe, Asia, and Africa. The puma, the jaguar, the tapir, the capybara, the lama or glama, and vicugna, and the whole tribe of sapajous, were to them, entirely new animals, of which they had not the smallest idea.” (62.)

Now from *Scriptural* data we are certain that all these, and every other peculiarity of the kind, have become such, since the Deluge. *All* the animals of every country were then destroyed, except those preserved in the Ark, for future propagation; and these were removed from their asylum on the mountains of Ararat in *Asia*.

All the progenitors, therefore, both of men and animals, immediately after the universal Deluge, did certainly live in Asia, and in Asia alone. But all those “genera” above named, and various others, are not now found at all in Asia, but only in the places peculiar to them. *One* of two things, then, is inevitable; either these said animals have *deviated* from their ancestors, or they have become peculiar to New Holland and *extinct* in Asia, and that since the Deluge. Either of these facts is absolute destruction to this Theory. For if these animals have *changed* from the form and appearance of their ancestors, and this since the general Deluge, nothing forbids us to believe the same respecting the whole tribe of M. Cuvier’s and Mr. Buckland’s “*extinct*” species, and even genera. Or if they have become *extinct* in Asia since the Deluge, animals may have become extinct in England and

Germany, since the same catastrophe. Take which side of this question we will, therefore, there are difficulties which naturalists do not, and consistently with their Theory never can, explain.

OF TRANSPORTATION. Suppose we adopt the notion that these animals have been transported from the plains about Ararat into New Holland and America; how shall we account for their passage over the sea? Did they go alone, or were they conveyed in ships? Was the *period* of their departure from Asia early after the Flood, or modernly? If early, how were they conveyed? If after their families became numerous, how are we to account for the whole tribe emigrating so as not to leave *one pair* behind to perpetuate the species? Were the sons of Noah navigators, and did they convey these animals to their respective situations on board a ship? This last suggestion would be ruinous to the *philosophy* of our Theorists. They would then be obliged to acknowledge that the art of *Navigation* was known and practised by the ancients, and for many generations again became extinct.

If animals are supposed to *migrate* by their own natural instinct, what shall we say of the *sloth*, which is peculiar to *America*? and how, with its present habits, did it get from Asia thither? The Northern Straits are on all hands admitted to have been there as long ago as the Deluge. And if not, with the idle habits which naturalists attribute to that animal, it would cost it a journey of many thousand years to range from Ararat to America, half way round the globe. Yet all are said to be *extinct* in Asia, and peculiar to the new world!!!—M. Cuvier speaks of a fossil

animal found in America, allied to the sloth, which is big as a rhinoceros. Such an animal with the habits of a modern sloth, at the assigned rate of "*fifty yards a week*", would scarcely arrive in America, even if it could travel without interruption by land, in ten thousand years!!!—The notion, therefore, as expressing a fact, is impracticable, and impossible.

Even on M. Cuvier's principle respecting the last catastrophe, as "sudden", and the sea being instantly forced over the land, it is quite impossible that such animals as the "sloth" tribe could escape total destruction. Besides, it is essential to this "Theory" that the animals should be *successive*, and "change with the *strata*", and not be transmitted from one catastrophe to another. *That* would be destructive to the system altogether; for its "successive revolutions" are suspended entirely upon the "*different*" animals which the "successive strata" exhibit. Therefore the *difficulty* presses equally hard on them upon every supposition; and these animals must have become *extinct* in Asia,—must have been *transported* into America,—or, they must have been newly *created*, and that SINCE THE DELUGE!!!—When our geologists shall, upon their own principles, satisfactorily account for such facts and circumstances as the above, it will then be soon enough for us to pay a grave attention to their *hypotheses* respecting the *extinct* fossil bones found in England and on the Continent.

It is quite obvious that the *Human race* now existing, all of whom had their ancestry in one pair, at the Deluge, viz. Noah and his wife, have deviated so much from each other, that they could not live in each

other's climate,—the Greenlander in Africa, for instance,—or the Negro in Lapland or Siberia. Why then may not animals have varied likewise?

III. IT DOES NOT APPEAR THAT SOME FOSSIL ANIMALS ARE NOT NOW LIVING UPON EARTH.

Of the *unicorn* mentioned by Mr. Biddulph as having been lately discovered in the regions of Tartary, I cannot speak with confidence, as he has not quoted the evidence upon which he grounds his testimony.

The fossil *Rhinoceros*, however, seems to have more claim to our regard. “The skull of this Rhinoceros “ was brought to England by Mr. Campbell, who shot “ the animal about two hundred and fifty or three hundred “ miles from the west of Dela Goa Bay, six miles west “ of the City Mashow and about one thousand miles in “ nearly a straight direction from the Cape of Good “ Hope.” Sir Everard Home having minutely examined this skull and found in it the ‘exact resemblance to the fossil skull from Siberia,’ thus concludes; —“ that although many animals belonging to former “ ages may be extinct, they are not necessarily so; no “ change having taken place in our globe which had “ destroyed all existing animals, and therefore many of “ them may be now in being, although we have not “ been able to discover them.” (Journal of Science No. 27, p. 164.)

IV. ANALOGY BEARS STRONGLY AGAINST THIS THEORY.

From all we have seen of the change in animals since the Deluge, it seems impossible that M. Cuvier can *prove* that a great portion of the fossil bones of animals which he has examined and pronounced extinct, might

not vary so much as those vary from the bones of existing animals, by climate, food, and change of place, in the course of four or five thousand years. But upon the *proof* of this point the whole system hangs.

Again. Analogy even from M. Cuvier's own pen is against himself. We remember with respect to *fishes*, how he stated that the species might easily be driven away, or even *changed*, only by the "temperature" of the water. What then should hinder the extreme variation of heat and cold on *land* &c. from producing the same effect?

But even were the globe to be drowned now, not the least evidence from analogy could be derived to M. Cuvier's system. For we find *different* animals in almost every country. Were *these* then to be imbedded where they are, it would be the highest possible absurdity, for any naturalist, who should examine a small space, like the Paris stone quarries, for instance, to pronounce upon the state of the *globe* from such a *specimen*.

CHAPTER IV.

FOSSIL REMAINS OF QUADRUPEDS. SITUATION OF THEIR BONES IN THE STRATA.

The reader now perfectly understands the responsibility of this Theory, that it is necessary it should prove—that animals are really extinct—that they became extinct before man was created, and not at, or since the Deluge—and, that these bones are so situated in the strata as to prove successive and numerous formations Some difficulties attending the proof of “extinct animals,” we considered in the last chapter. The *situation* of fossil bones in the strata, must now engage our attention. M. Cuvier, fully aware of what is incumbent upon him, introduces his proof of revolutions by the following observation.

“The most important consideration, and that which
“has been the chief object of my researches, and which
“constitutes their legitimate connexion with the Theory
“of the earth, is to ascertain the particular strata in
“which each of the species was found.” (105.)

The author here certainly states the precise point at issue. "The particular *strata* in which each species was found," is doubtless one essential part of the whole Theory. There could not possibly be any thing "legitimate" in the adduction of the fossil bones of animals for the purpose of proving by their testimony numerous successions and catastrophes in the earth, upon any other ground. It is indeed "the most important consideration" in this discussion.

The careful reader will recollect that when we considered the subject of the "Paris formation" in the early part of this treatise, we took M. Cuvier's THEORY as stated in the plate prefixed to his book, and admitted it in the most simple and favourable character of that Theory, without attending particularly to the fact of the case, or to the evidence upon which that system is built. The FACT or evidence arising out of the fossil strata, we must now examine.—With respect to "viviparous land quadrupeds" which form the subject of the present inquiry, M. Cuvier writes as follows.

"There is also a determinate order observable in the deposition of these bones in regard to each other, which indicates a very remarkable succession in the appearance of the different species. (109.)

The "*determinate order*" "which indicates" this "very remarkable succession in the appearance of different species" which are found in the fossil strata, we must attend to very minutely; for here the whole burden of the subject rests. *What* now, we must inquire, will be necessary, as it respects the bones of these animals in the strata, to give the Author's Theory the least possible chance of success? It is certain, if the

specimen here exhibited be to prove similar successions throughout the globe, that the *specimen* must be perfectly clear, convincing, and unexceptionable, as far as it goes. For if the example by which we are to judge of others, be itself imperfect and liable to uncertainty, how absurd to decide upon a general Theory from such data!—As it respects the fossil shells and fishes, we have seen the positive and absolute failure of the specimen which our authors have produced. If then any thing favourable to this Theory is to be proved by the fossil bones in the strata, it is necessary that the following particulars take place.

I. As it respects the “PARTICULAR STRATA.”

1. They must be distinct and well defined.
2. Their situation must be regular and uniform.
3. Their extent adequately large.
4. And their successions marked and decisive.

II. As it respects the “FOSSIL BONES” in the strata.

1. They must be peculiar, not intermingling with the fossil bones of other strata.
2. They must not occur a second time.
3. They must follow in succession.
4. And their successions must be as numerous as the revolutions indicated by those successions.

We see here that there are *two* points which must very particularly engage our attention ; viz. the “fossil *strata*,” and the “fossil *bones*” in those strata. The former must be the present subject of inquiry.

THE NATURE AND SITUATION OF THE FOSSIL STRATA.

“ The particular strata in which each of the species was found”, is “ the important consideration” in the present inquiry. It is quite obvious that if these “ particular strata” are *not* particular; viz. if their *nature*, their *situation*, their *extent*, and their *succession*, be not clear, specific, and well understood and well defined; it would be perfect mockery as it respects *science*, and profane as applied to *divinity*, to attempt to raise a Theory of the earth upon such a foundation.

We must therefore examine these “ particular strata,” and inquire whether their situation and extent will justify the pretensions of this modern geological Theory. It is very remarkable that M. Cuvier under all his professions of precision, accuracy, and demonstration, never once, as I recollect, either tells us the *name*, or particularly describes the *nature*, of the most *ancient* and important of all his fossil strata, in any part of his Theory where these strata are considered. He speaks of their situation and character in the following *general* manner.

“ None of the large species of quadrupeds, whose remains are now found imbedded in the regular rocky strata, are at all similar to any of the known living species.” (87.)

He professes “ to prove that the rocky strata contain the bones of several genera, and the loose strata

“ those of several species, all of which are not now existing animals on the face of our globe.” (126.)

All the specification here, is “ regular rocky strata” and “ loose strata.” The “ regular rocky strata” we here learn, contain the “ genera”, and the “ loose strata” the “ species”, all of which are extinct. No one, however, possessed of common understanding, will consider this designation and description of the “ particular strata in which each of the species was found”, as *proving* any thing relative to his Theory. It gives us literally no information as to the “ *particular strata*” and their respective peculiar “ *species.*” Such as it is, however, the information is this:

1. That there are “ several genera” and “ several species” of fossil animals which are now extinct.

2. That “ the regular rocky strata” designate the situation of the “ extinct genera”, and the “ loose strata” the situation of the “ extinct species.”

In confirmation of his Theory M. Cuvier says,

“ From all these well-established facts, there does not seem to be the smallest foundation for supposing that the new genera which I have discovered or established among extraneous fossils, such as the *palæotherium, anoplotherium, megalonyx, pterodactylis, &c.* have ever been the sources of any of our present animals, which only differ so far as they are influenced by time and climate.” (125.)

If the above could be proved, which is certainly a very difficult task, it would prove nothing whatever about successions and numerous revolutions in the earth, unless their respective, distinct, and unmixed

character in their respective strata do this. M. Cuvier, perfectly aware of this, endeavours to point out the relative *situation* of the strata in which "each species" is found. I shall give an abstract of this Author's description of the respective strata, and of the bones found in them, only taking the liberty of *numbering* and *marking* them for distinction's sake.

1. "THE OVIPAROUS QUADRUPEDS are found "considerably earlier, or in more ancient strata, than "those of the VIVIPAROUS class. Thus the crocodiles are found *underneath* the chalk—and *in* the *chalk*—and the monitors in the *copper or marl slate.*" (106.)

2. THE MAMMIFEROUS LAND QUADRUPEDS.

"Yet neither at that early epoch, nor during the "chalk strata, nor even for a long period afterwards, "do we find any fossil remains of mammiferous land "quadrupeds.—No bones of mammiferous land quadrupeds are to be found," "in the coarse shell "limestone which immediately covers the chalk strata "in the neighbourhood of Paris." "But immediately "on reaching" "the formations which lie over the "coarse limestone strata," "the bones of land quadrupeds are discovered in great abundance." (107.)

A further description of the *situation* and partially of the *strata* in which these "land quadrupeds are found imbedded, is given in the next and following pages. We learn here that neither the *chalk* (which is indeed the ground floor of the Paris Basin) nor the "*coarse shell limestone*" which covers the chalk, affords bones of these extinct genera of land quadrupeds. But that they are contained in the "formations which

are placed directly over the coarse limestone strata.” —In order that the reader may form a just conception of the *situation* of the strata after which we are now particularly inquiring, he must have a clear view of all the strata as they are described in the Paris Basin. This is given in a plate annexed to M. Cuvier’s Book, and in Mr. Jameson’s notes, and is as follows.

PARIS BASIN.

1. Chalk and flint.
2. Plastic clay and lower sand.
3. Coarse marine limestone.
4. Lower fresh water formation, lower marine sandstone.
5. Gypsum and marl containing bones of animals.
6. Bed of Oysters.
7. Sandstone and sand without shells.
8. Upper marine sandstone.
9. Millstone without shells.
10. Upper fresh water formation—millstone—flint—limestone.
11. Alluvial sand, marl, clay, pebbles, &c.

The chalk and flint are here at the bottom of the Paris Basin, and the alluvial at the top, which reaches to the surface of the earth. The “coarse marine limestone,” which furnishes M. Cuvier with so great a number of his shells, is the *third*. The “gypsum” or “*Paris formation*” in which the bones of the “extinct *genera*” are found, is the *fifth* from the bottom, and nearly the same from the top of the Basin.—The reader, by keeping this scale of strata in view, will be able to understand M. Cuvier’s statements; as far, at least, as they are intelligible. We must particularly

remember the “coarse marine limestone” and the “gypsum” which are the *third* and *fifth* strata.

EXTINCT GENERA.

“All the known specimens of viviparous land quadrupeds have either been found in these formations from fresh water, or in alluvial formations.—All the genera which are now unknown as the *palæotheria*, *anaplotheria*, &c, with the localities of which we are thoroughly acquainted, are found in—those formations—which are placed directly over the coarse limestone strata:—they—occupy the regular strata that have been deposited from fresh water, or certain alluvial beds—generally composed of sand and rounded pebbles.” (109)

THE EXTINCT SPECIES.

“The most celebrated of the unknown species belonging to the known genera, or to genera nearly allied to those that are known, as the fossil elephant, rhinoceros, hippopotamus, and *mastodon*, are never found along with the most ancient genera; but are only contained in alluvial formations, sometimes along with sea shells, but never in regular rocky strata.” (110)

THE EXISTING SPECIES.

“Lastly, the bones of species which are apparently the same with those that still exist alive, are never found except in the latest alluvial depositions, or those which are either formed on the side of rivers, or on the bottoms of ancient lakes or marshes now dried up, or in the substance of beds of peat, or in the fissures and caverns of ancient rocks, or at small depths below the present surface, in places

“ where they may have been overwhelmed by debris, or even buried by man.” (110, 111.)

I have given the entire subject of M. Cuvier’s fossil land quadrupeds, and their situation in the strata, comprehending his earliest, which are the extinct genera,—the extinct species, which are the next,—and the existing races, which are the uppermost or last fossils found in the strata of the earth. The *situation* of these fossil bones, as here described, must now be scrutinized. The *bones* themselves will be afterwards considered.—In the preceding quotation I have given every thing which belongs to the *description* of the strata. The words which I have omitted, and supplied by hyphens, thus —, are the Author’s comment and Theory, running along with the description, and which serve no purpose but to bewilder and delude the reader into an admission that the Author’s Theory is right, because M. Cuvier *says* it is, and not because his *descriptions prove* it to be so.—Thus, for instance, he not less than *three* times in the short paragraph quoted above, respecting the situation of the extinct genera, makes his *Theory* part of the description itself;—“ are found in the *most ancient* of those formations” —“ alluvial beds of very *ancient* formation, generally composed of sand, &c.—“ which were perhaps the *earliest* formations of the ancient world” —all which *assumptions* are the very points to be proved.

I. Here I would observe that the PARIS BASIN is not a genuine *specimen* of a “Theory of the earth.”—Its amount, as we before remarked, is next to nothing.—It is contrary to the “Theory” itself, to judge of other parts of the earth, from the contents of any one basin.

For the author expressly makes it a part of his Theory that, "when the surface of the seas came to be divided by islands and projecting ridges, different changes took place in every separate basin;" and that "in animal nature,—there has been a succession of changes corresponding to those which took place in the chemical nature of the fluid." (12, 13.)

To expect therefore to find in other basins either the same strata or the same sort of animal remains, which are found in the Paris basin would be perfectly unnatural, unreasonable, and contrary to the Theory, which supposes different changes to take place in every separate basin. And the Paris basin being, according to the express declaration of Mr. Jameson, "entirely composed of newer flætz rocks of which the oldest, or lowest, is common chalk," the sea must have been long divided by ridges, and islands, before even that chalk was formed. The Paris basin therefore must be precisely one of those which illustrates the authors' position that "different changes took place in every separate basin." It is certain then that this basin and its contents ought to be looked upon as *peculiar* and not as a specimen by which to judge of the world.

II. STRATA OF THE EXTINCT GENERA.

The strata in no wise bear out the author's Theory as it respects "THE REGULAR ROCKY STRATA."—That these strata in the *Paris formation* which embrace the "extinct genera," are neither regularly rocky, nor extensive, (both of which are absolutely necessary to the Theory, as a recurrence to our RULES will instantly shew,) appears from M. Cuvier's own description, and from Mr. Jameson's notes.

“It is remarkable (says M. Cuvier) that those
 “coarse limestone strata [the third above mentioned]
 “which are chiefly employed in Paris for building, are
 “the last [the *last*] formed strata which indicate a long
 “and quiet continuance of the water of the sea above
 “the surface of our continent. Above them, indeed,
 “there are formations containing abundance of shells
 “and other productions of the sea; but these consist
 “of alluvial materials, [N. B.] sand, marl, sandstone,
 “or clay, which rather indicate transportations that
 “have taken place with some degree of violence, than
 “strata formed by quiet depositions; and where some
 “regular rocky strata, [N. B.] of inconsiderable extent
 “or thickness, appear above or below these alluvial
 “formations, they generally bear the marks of having
 “been deposited from fresh water.” (108.)

This description embraces the “Paris formation,”
 the situation of the oldest animals, or extinct genera.
 “All the genera which are now unknown—are found
 —*directly over* the coarse limestone strata.” And
 the author immediately adds, after the above long quo-
 tation, “All the known specimens of the bones of vi-
 “viparous land quadrupeds, have either been found in
 “these formations from fresh water or from alluvial
 “formations.” “All” the “extinct genera” “are
 “found—directly over the coarse limestone strata”—
 “in “strata that have been deposited from fresh
 “water, or certain alluvial beds.” (109.)

It is perfectly demonstrable that these strata in which
 these extinct genera are found, are neither “regular,”
 nor perfectly distinguished from the “alluvial forma-
 tions;” for these “alluvial formations” are occasionally

both “*above*” and “*below*” these “regular rocky strata.” These regular rocky strata, moreover, are of “*inconsiderable extent and thickness.*” They cannot therefore be of the least value as a general specimen.— Besides, they are supposed, by these Authors, to be rocks deposited by “*fresh water lakes.*” But every “fresh water lake” is a comparatively trifling thing— is local, peculiar, and in every way separate from general considerations. It is perfectly absurd, therefore, to think for a moment to establish these as a specimen or proof of any thing but their own existence.

2. This will further appear from Mr. Jameson’s notes on this subject. In his description of the “gypsum” or “Paris formation” we shall see that those celebrated “rocky strata”, in which these “extinct genera” are found, cannot possibly be clearly distinguished from the “alluvial formations”; which M. Cuvier, as we have seen, admits are both “above” and “below” the Paris formation. Indeed these gypsum strata are not a *distinct* or distinguishable formation in any respect suitable to the Theory, but are exactly calculated to destroy it. A formation, to answer in any satisfactory way whatever the design of the Theory and the ends of succession, must be *homogenous* or *uniform* in its nature and composition—must be *regular* in its relative situation, viz. as respects the strata above and below it—and it must be as *extensive* as the building we erect upon it. These are the obvious dictates of common sense. Every one of these essential requisites is, however, positively violated in this formation, and that to a high degree.

FIRST. The FORMATION itself is actually a *com-*

pound. Instead of being one simple and uniform deposit, as the system requires, it is strictly not one, but *two* formations. Its title is actually set forth in the following manner, though it all belong to this “Paris formation.”

“FIFTH AND SIXTH FORMATIONS.

“*Fresh water and marine origin.*

“*Gypsum formation and the marine marl formation.*”

The very title of this formation is positive death to M. Cuvier's Theory. We need not say it is defective, and fails of proving the end aimed at; but it is so circumstanced that it cannot possibly exist with it. The “Theory” and this “formation” cannot stand together. One must destroy the other. This will be demonstrated when we come to the consideration of the *physical* character of the strata. But as it respects the *situation* of the bones of the “extinct genera” in these formations, the thing speaks for itself, if we only determinately keep the essence of the subject before us, and not suffer the *Theory* to run away with us, instead of the *fact*. The system is no system, and the Theory is dissolved and melted away, if the “*regular rocky strata*” do not distinguish the “*extinct genera*”, and the “*loose strata*” distinguish the “*extinct species*”; and further, it cannot even exist, if both these are not clearly distinguished from the present “*living species.*” (87.)

Here, however, we see there is nothing like “regular rocky strata.” For “*regular*” in this connexion has no use, no meaning, unless it mean strata, continued and uninterrupted;—strata, which are a formation of

themselves—strata which might not only by possibility be “deposited” regularly as we find them, but strata demonstrably proved to have been so deposited. But *here* it is utterly impossible. The “Paris formation”, if the above account of M. Cuvier and Professor Jameson be correct, is not one “regular” formation at all; it is two formations in one,—it is a compound of sea and land, of fresh and salt water formations,—it is made up of fresh water gypsum, and of salt water marl of two descriptions; viz. of clay marl and calcareous marl. “This formation (says Mr. Jameson) is not entirely of gypsum, but contains also beds of clay marl and calcareous marl.”(411)

The *form*, moreover, of this “gypsum” is not that of “regular rocky strata”, which can answer the purposes of this Theory; viz. uniform, peculiar, and extensive. For the same authority adds, “the gypsum, which is the principal mass of the formation, does not occur in wide extended plateaus, like the limestone, but in single conical or longish masses, which are sometimes of considerable extent, but always sharply bounded.” (412.)

As this gypsum formation is cut off *laterally* from the form and character of a “regular” and extensive formation, so it is *vertically*, or above and below itself. “The *first bed* (of which there are three) consists of alternate layers of gypsum, solid calcareous marl, and of thin slaty argillaceous marl.”—“The *third*, or *upper bed*, is by far the greatest, being in several places more than sixty feet thick. It contains few beds of marl.” Still “the upper strata, (of this bed) of which five generally occur,—are intermixed

“with marl, and also alternate with beds of it.” (412—13)

It is perfectly clear from the above, that this gypsum and marl were formed together. They are “*intermixed*” and they “*alternate*” or change places, their several layers follow one another in succession, making them contemporaneous in their formation. The nature and character, therefore, of “regular rocky strata” cannot in common fairness be applied to such a formation. We have gypsum and marl, a fresh and salt water formation, in union in all directions. We shall hereafter shew, what indeed, were we not dazzled by the glare of Theory, would be clear as noon day, that these intermixtures and alternations prove contemporaneous formation. But can any sensible person who understands the nature of evidence before us, believe that a fresh water lake has first deposited one layer of gypsum, and then the sea water deposited a layer of marl; then again a second fresh water deposit, and a second marine deposit, for “five” strata in succession, even in *one* (the third or upper) bed of this celebrated formation!!

But this is not all. Were we to admit the above absurdity, it would not answer the end. For the *marine marl itself*, contains the fossil bones of these extinct animals, as well as the gypsum which is a fresh water deposit. “To the north of Paris these bones of (unknown birds and quadrupeds) are found in the gypsum itself,—to the south of Paris similar remains —are met with in the marl which separates the beds of gypsum.” (413.)

In relation to the above, it is obvious that these land animals could not live in the sea, while the

waters deposited this marl around them, supposing it to have overflowed the situation in which they dwelt. And had the salt and fresh water alternately overflowed their country, the animals would have been overwhelmed by the catastrophe, and their bones buried *under* the mud. But the bones of these animals are mixed up “*in the gypsum*”, and “*in the marl*” which separates the strata of gypsum from each other; and this, though the gypsum be in some “places more than sixty feet thick.” And what is more extraordinary, and renders the Theory still more impossible is, it is “the *upper* bed of gypsum” only in which these bones are discovered. There must, therefore, have been a long space of time for these enormous animals to have established themselves on the spot, after the last retreat (of perhaps a dozen such events) of the sea from the situation in which their bones are found. (413.)

SECONDLY. The NATURE of this “Paris formation” does not clearly distinguish it from the “*loose strata*.” In other words, the strata cannot be called “regular rocky strata” as opposed to the “loose or alluvial strata.”—Whether Professor Jameson intend the following description of the Paris formation to apply peculiarly to that formation as it is found in the neighbourhood of Paris, or whether he suppose it to apply more generally, so as to include some other basins in which the Paris formation may be discovered, the effort will be much the same, in its application to the general Theory. In describing the eleventh formation, called the “Paris formation”, under “The distribution of petrifications in the dif-

ferent classes of rocks", Mr. Jameson gives us the following account :

" The newest members of the series [in the Paris formation] are of so loose a texture, the fossil organic remains they contain so nearly resemble those which now inhabit the earth, and they are so nearly related to alluvial formations which are daily forming, that it is often extremely difficult to determine whether they belong to the alluvial or newest flætz formation. The petrifications they contain are of zoophytes, shells, fishes, and amphibious animals ; and fossil remains of birds and quadrupeds here for the first time appear inclosed in strata. The country around Paris, that of the Isle of Wight, and other districts in the south of England, belong to this formation." (355.)

I would observe here, that this description of the Paris formation—Includes "the country around Paris", or the Paris basin ;—That its strata "are so nearly related to the *alluvial* formations—that it is often extremely difficult to determine whether they belong to the *alluvial* or newest flætz formation." Or in other words, whether they are "rocky strata" or "*loose* strata."

The only thing which it concerns me particularly to notice in this place, is this : From Mr. Jameson's positive and plain discription of the Paris formation, it is absolutely impossible for M. Cuvier, or any other man, to establish his Theory upon it. The *palæotheria*, or, "extinct animals," are found here. Nay they are found only in the "*upper layer*" of this formation. But we see above, that the "newest" (viz. the *upper*)

members of the series" of this formation, are of "so loose a texture" that they cannot be said not to belong to the "loose" or "*alluvial formations.*" But this Theory is positively built upon the assumption that these "*palæotheria*" are actually found in the "regular rocky strata," as DISTINGUISHED from the "*loose* or *alluvial strata*" in which the "extinct species" are imbedded.—Thus, then, the main pillar of this modern Geology is discovered to rest upon "*loose*" materials instead of a "regular *rocky*" foundation. It turns out that there is no "regular rocky strata" of an extensive, uniform, uncompounded character, in this "*Paris formation*"—these gypsum and marly strata in which the "*palæotheria*" or "extinct *genera*" are found: nay that they cannot always be distinguished from the "*loose* or *alluvial strata*" which the Theory makes to be peculiar to the "extinct *species.*"

THIRDLY. The "*extinct genera*" are actually found in the "*alluvial formations.*" This we have already quoted.

"All the genera which are now unknown, as the "*palæotheria, anaplotheria, &c.* with the localities of "which we are thoroughly acquainted, are found in "formations which are placed directly over the coarse "limestone strata.—They occupy the regular strata "that have been deposited from fresh water, or certain "alluvial beds,—generally composed of sand and "rounded pebbles." (109.)

"*Regular strata*" "OR *alluvial beds of sand and rounded pebbles.*" Surely this is ruinous to any Theory professedly built upon the distinction between "*rocky strata*" and "*loose strata.*" Here we have the same

extinct genera, the celebrated *palæotheria* both in the “regular rocky strata” and in the “alluvial” strata “composed of sand and rounded pebbles.” “Sand” and “pebbles” doubtless, are far enough from “regular rocky strata.” Yet these same ancient unknown animals are found in them *both*. Where then is the evidence upon which the pretence is raised; viz. “to *prove* that the *rocky* strata contain the bony remains of several genera, and the *loose* strata those of several species, all of which” are now extinct? The distinction between the “rocky” and “loose” strata as to its present application, is not only positively without evidence, but were it allowed to be ever so correct, would be perfectly useless as a line of demarkation for the “extinct genera,” for those “extinct genera” are really found in both the “rocky” and “loose” deposits.

I am aware, as I before observed, that M. Cuvier *says* these are “alluvial beds of very ancient formation, “—perhaps the—alluvial formations of the ancient “world.” (109, 10.) We shall by and by prove that this “*perhaps*” of our author cannot possibly apply, or the thing supposed, exist. In the meantime it may be enough to observe that the unsupported opinion, even hesitating opinion, of a man whose profession as well as duty it is to *prove* his principles, and not to assume or beg them, is worth nothing.—Mr. Jameson, in his notes, likewise confirms the fact that the bones of this extinct genus, the “*palæotherium*,” are found in the “alluvial soil” as well as in the “rocky strata.” Of this genus he says,

“This is a new and entirely fossil genus, which was “found by M. Cuvier in the rocks around Paris.”

There are ten species of this genus, five of which were “found near Paris. “ Besides these five species “ found in the gypsum quarries around Paris, remains “ of others have been discovered in other parts of “ France, either imbedded in the *fresh-water limestone*, “ or in alluvial soil.” (389.)

Here we may remark that of these ten species of the *palæotherium*, the five found “in the rocks around Paris” are stated to have been as large as a horse and as small as a sheep;—the other five discovered in the “*limestone*” or “*alluvial soil*” were as large as a *rhinoceros* and as small as a sheep. Thus, it does not appear, that even the largest of these ancient or extinct animals might not be imbedded in the “alluvial soil.”

FOURTHLY. The palæotheria are also found in “limestone” strata.

This appears from the above quotation, where it is called “*fresh-water limestone*.” In page 374 it is asserted, respecting an animal which we must shortly notice, “It occurs in limestone, along with the bones of the palæotherium.” And again, Mr. Jameson writes respecting this said extinct genus and its situation, thus; “These characters apply only to the limestone near Paris; for, at a considerable distance, the limestone occurs very compact, of a greyish brown colour, and which readily cuts and polishes. “ The limestone of Mount-Abusar, near Orleans, which contains the bones of the palæotherium, belong to this formation.” (423.)

Thus we perceive that this extinct genus—the palæotherium—is in fact, found in four sorts of strata; in the “*gypsum*,”—in the “*marl*” attending the gypsum,—

in the "*alluvial soil*"—and in the "*fresh-water limestone.*" When Mr. Jameson, in the quotation just adduced, writes; "the *limestone* of Mount "Abusar, near Orleans, which contains the bones of the "palæotherium, belongs to this formation;" the reader will be anxious to know, of course, to what formation this author alludes. And he will probably hear with some astonishment that this "fresh-water limestone" which contains these "extinct" remains, is, *The "tenth formation" in "the environs of Paris!"*

The "*tenth formation*"! Yes. The tenth formation, and it "contains the bones of the palæotherium." But we set out awhile ago to examine the proof of modern Geology upon the evidence that the palæotheria were confined to the "rocky strata" which are deep and ancient, contained in the "Paris formation:" which Paris formation we particularly noticed was the "*fifth and sixth*" formations in the "Paris basin." Now however we find the same extinct animals imbedded in the limestone rocks of Mount Abusar, which belongs to the "*tenth formation*" in the same basin!! —This is surely ruinous to every pretence of "particular strata" embracing only peculiar species of fossil remains!

III. STRATA OF THE EXTINCT SPECIES.

I had prepared a long examination of the situation of the "extinct species," in the "loose strata." But for many reasons I feel that a short notice of this part will be deemed sufficient. I shall give two. The first is this. Mr. Jameson, in the passage quoted a few pages back, says, even of the "Paris formation"—the

situation of the extinct genera—the upper beds are of “so loose a texture” that they cannot always be known from the “alluvial formations which are daily forming.” Much less then can the “loose soil” of the “extinct species” be easily distinguished from the “loose soil” in which *existing* species are found. Secondly; the “extinct species” (and even the “extinct genera”) mingle so much with all we have yet to say relative to the “fossil bones,” that any large examination of this subject will be unnecessary.—I shall only make a brief reference or two to the subject of the “alluvial soils” in which, it is stated, the “extinct species” are imbedded. Doubtless, according to the modern system of Geological judgment, the “alluvial soils” must be deemed to consist of several *epochs* of formation. If however, we have proved the mode of judging respecting the “rocky strata” to be erroneous, much more may we expect the same respecting the “loose strata.”

ALLUVIAL FORMATION, as distinguished from rocky strata.

1. Of this Professor Jameson speaks thus. “This appears also to be a deposit from fresh water. It consists of sand of many different colours, marl, clay, and even of mixtures of the whole three, which is intermixed, and coloured brown and black with carbonaceous matter; also of rolled masses of different kinds; and, what particularly characterizes it, large trunks of trees, and bones of elephants, oxen, deer, and other large mammalia. Although this formation is new in comparison of those (the flætz) we have just described, yet it is of high antiquity with regard to man.” “The alluvial substances occur in

“valleys ; and then they consist of sand, loam, or peat ;
 “—and on high plains ; and then they consist of
 “gravel and sand. It is difficult to distinguish the
 “alluvial mud, situated at a distance from the valleys,
 “from the fresh-water formation, and it even, in some
 “places, seems to pass into it. It appears, however,
 “to be older than that of the valleys. (425, 6.)

“*Now*” with regard to the flætz being *old* in comparison of “man.” Then there must have been a wide chasm or interval between the latest, even the “tenth formation” of the Paris basin which lies directly beneath this alluvial, and any part of the alluvial in which “man” could enter. This is precisely the system of modern Geology. Not only the above, but M. Cuvier throughout his Theory,—Mr. Buckland in his Reliq. Diluv.—the author of the paper of animal remains in the Edinburgh Encyclopædia,—and Geologists generally, determinately assert that no “*fossil human bones*” have ever been found in the “alluvial formations ;” viz. in *that part* of the “alluvial formations,” they must mean, which their system makes peculiar to the “extinct species ;” for found in the “alluvial formations” they certainly are, and this they cannot deny. But

2. Mr. Buckland, notwithstanding the above, finds it essential to his proof of the operations of the *Deluge*, and largely endeavours to establish the fact, that the “alluvial soil” above described, in which are found the bones of the elephant &c. is of “*diluvial formation.*” Or such as was formed by our Deluge. Of the justice of this opinion there ought not to be a moment’s doubt. But then the admission of its truth, will not only render nugatory Mr. Buckland’s other opinion that the

bones of the human race are not contained in the "alluvial," or in *his* language, "diluvial formations"—but will be destructive to a large portion of the modern Geological "Theory;" and will bear hard upon some other parts of Mr. Buckland's discussions on the subject of diluvial operations. These, however, we shall defer to the following parts of this examination.

CHAPTER V.

FOSSIL BONES OF QUADRUPEDS, THEIR RELATIVE SITUATION AND INTERMIXTURES.

IN the former chapter we discussed, and I hope, pretty much settled, the situation of the fossil quadrupeds, as it respects the strata. We must now consider their situation with respect to each other. A few things must here be premised, for the sake of guiding the reader's views as we proceed. He knows that the "rocky strata" and the "loose strata", or in other words, such strata as those of the "Paris formation" and those of the "alluvial formations", are the only strata by which M. Cuvier professes to judge (by the presence of quadrupeds) respecting his numerous revolutions. The "rocky strata", we have shewn, do not afford characters properly distinguished from the alluvial, nor do the alluvial from each other.

1. Then, The "rocky strata" cannot, in point of time and formation, be proved to have been prior to the "alluvial formations"; and that in fact, they merge one in the other.

2. The “alluvial formations” cannot be traced higher than the Mosaic deluge. Therefore, whatever distinctions may be fancied or proved with respect to those formations, they all merge within the range of Scripture, and the creation of man.

If the reader feel some hesitation in admitting the truth of this second proposition, I would request him, merely to bear it in mind as a land-mark; the *proof* will rise as we proceed; and, at any rate, the discussion of the *Physical* portion of Geology will fully satisfy him that the “alluvial” deposits and even the rocky strata, are of diluvial origin.—We have seen that Geologists have failed in their attempt to prove the regularity and *succession* of the “fossil strata”,—those strata not being found distinct, but mixed and confluent,—now we must enquire whether the fossil bones themselves be not mixed and confounded. This, indeed, we shall find they are, in all directions.—The *three* orders are, as the reader knows,

1. The “palæotheria” or “extinct genera.”
2. The elephant, rhinoceros, &c. or the “extinct species.”
3. The “existing races”, including the human species.

M. Cuvier’s theory requires that these *three* classes of animals be of three distinct epochs,—should never mix with each other, nor be found in each other’s strata. “The unknown species—are never found with “the ancient genera”;—and “the bones of species “which still exist alive, are never found except in the “very latest alluvial depositions”, and never, therefore, with either the “extinct species” or “extinct genera.”

I would here remark, that the *number* of the fossil bones of another class, forms no argument and makes no difference. *One* ancient animal among the existing races, or *one bone* of man, or an *existing* animal among the ancient races, would as certainly *prove* those respective animals to be contemporaneous as ten thousand.

I. EXTINCT SPECIES, AND EVEN EXISTING SPECIES AMONG THE EXTINCT GENERA.

1. The reader will, probably, learn with astonishment, that M. Cuvier himself acknowledges there “are some lost species of known genera” “along with” “the palæotheria, anaplotheria, &c.” which are his “extinct genera.” That is, there are, by his own admission, “extinct *species*” mixed in the very same place with his “extinct *genera*” or most ancient genera. Then, infallibly, those “*species*” are of equal *antiquity* with those ancient “*genera*.” It is childish and absurd to think of diverting the reader’s attention from the *extinction* of the *Theory* which this fact produces, by adding—“but in small numbers;”—*one bone is death!*

2. The fossil roe of Orleans.

This roe is an existing *species* discovered among the most ancient genera—the palæotheria. It “was found “in the vicinity of Orleans in France. “It occurs in “limestone along with the bones of the palæotherium.” This fossil roe is “the remains of a living species.” (374.)

Here is a single fact as truly destructive of this modern Geological Theory as any number of facts could be. It is an union of the two extremes—the “*existing species*” with the “*ancient genera*.” Then

this existing species is as ancient as the *ancient genera*.—I must, in this instance, make two observations.

(1.) M. Cuvier attempts to remove the impression of this fatal fossil, from his Theory, by asking—“ May not the bones belong to a species of roe, of which the distinctive characters lie in parts hitherto undiscovered” ? (374)

It is quite clear that this explanation is equally ruinous to modern Geology, with the fact itself. For if this roe cannot be distinguished by the parts which have been discovered, the very pretence of all M. Cuvier’s *science*—to discover a genus or distinguish a species by half a bone—is absurd ; and he has no more claim to regard on the assumption of anatomical knowledge, than other men.—But this roe is of the “ *living species*”, and the fossils among which it is found are not “ *extinct species*” but “ *extinct genera.*” If therefore there could be any doubt about the species, (which it seems there is not) it would still be destructive to this Theory. To obtain relief from this fatal instance, the roe must be proved to be an *extinct genus.*”

(2.) This roe of Orleans is found in the “ *limestone.*” This (as already observed respecting the *palæotheria* in this limestone) is one instance among many in which the Theory is destroyed by fact, both as it respects the *fossils* and the strata. Now in the “ *limestone* of the Paris quarries, the *palæotheria* are not at all found, but in the gypsum. If then similar strata are peculiar to similar petrifications, these strata ought not to be “ *limestone*” but gypsum.—But again, the “ *London clay*” is stated to possess the same kind of “ *fossil*

remains" with the "Paris limestone." Are *these* then of the same formation? Here then we have, according to the Theory, *two limestones* in the same basin not of the same formation, and *different* strata in *separate* basins which are of the same formation. That is, the "Orlean's limestone" must be of the same formation with the Paris gypsum, and the London clay with the Paris limestone. Hence will arise a string of absurdities.

—The "London clay" equals the "Paris limestone", which limestone is *below* the gypsum or "extinct genera."

—But the "*London clay*" which agrees with the "Paris limestone", is found *below* the "rhinoceros and elephant", which are "extinct species" in the Isle of Sheppey. Then the stratum *over* the London clay in the Isle of Sheppey must accord with the "Paris gypsum" and the "Orlean's limestone", and these extinct species (the elephant and the rhinoceros) must agree with the palæotheria or extinct genera.—This is ruinous.

—Again, the "*plastic clay*" lies *beneath* the "London clay." The plastic clay therefore must be, at least, one formation *beneath* the "Paris limestone", which agrees with the London clay. But the "plastic clay" in the "immediate vicinity of Margate" contains fossil bones. Thus then, the plastic clay of Margate¹ contains fossil bones which should accord with the *chalk* of Paris, which lies beneath the "Paris limestone."

¹ On the authority of Wilson Lowry Esq. I am enabled to state, that in "some beds belonging to the plastic clay formation in the immediate vicinity of Margate, fossil bones have lately been discovered." Phillips (26.)

—But this would be death upon death. Because, as we have seen no bones of land animals, are allowed by the Theory to exist in the “*chalk strata*”, nor even for a long period afterward ; nay, not till after the “shell limestone” (which accords with the London clay) “had been already deposited.” (107—8.) This, however, would be making *extinct* or *existing* species (for it is not said which) to lie in the FIRST (or *chalk*) formation in the Paris basin, while the “*extinct genera*” are found no lower than the gypsum, which is the FIFTH. That is, *modern* animals turn out to be *many* revolutions *more ancient* than the *most ancient* genera. —So extraordinarily absurd is this modern Theory !!

Geologists consider strata which are chemically different from each other to belong to the same formation, (as three distinct sorts of chalk, for instance) only because they contain the same kind of fossil remains. This, however, is *inverting* the nature of the evidence by which the Theory is professedly established. The “Theory” declares that “similar strata” contain “similar fossil remains.” But when they come to prove this by the strata, which do actually contain similar fossil remains, they find that the *strata* are not at all similar, nor do they prove, but contradict the Theory. These Geologists then desert their first principle, *assume* the truth of the *Theory*, and then prove the strata to be of the same formation because the Theory says they should be so!—Thus, then, *facts* are corrected by the assumed Theory, and any thing proved we please. That system must needs be erroneous which requires such supports as these.

II. ANCIENT GENERA AMONG THE MODERN OR EXISTING SPECIES.

There are numbers of cases in point here, and I find a difficulty in knowing which to select.

1. *The Mastodon, or Mammoth of Blumenbach.*

According to Mr. Jameson, in his notes on Cuvier's Theory, "this is entirely a fossil genus, no living species having hitherto been discovered in any part of the world." There are "five species of mastodons nearly allied to the elephant, these alone may be considered as forming a distinct, and hitherto unknown genus." (384,—5.)

This we see is an extinct genus, and therefore to be classed with the *palæotheria*. If M. Cuvier's Theory then be correct, this extinct genus must only be found two formations below the scriptural Deluge. For the *existing* species we know, were present at the Deluge,—the extinct species, therefore, would be one remove *lower*, and the extinct genera *two* below that catastrophe.—But "all" these "five fossil species" are found in the "alluvial soil", which alluvial soil is clearly not more ancient than the Deluge. I have here the satisfaction of uniting with *Mr. Buckland* in the assurance that the bones of the "mastodon", though an extinct genus, are certainly to be classed among "the bones of diluvial animals" who perished "at the time when the last great physical change by an inundation of water took place, over the surface of the whole earth." *Rel. Diluv.* (222—3.)

The *mastodon* will also bear, in another direction, to the ruin of this modern Theory. It has been found in different strata—high as the alluvial formations, and low as the chalk, and even the coal strata; which coal strata, are in Cuvier's plate, classed *ten* strata below the alluvial.

“ M. de la Buke, in a letter to professor Pictet, says, “ I was much surprised to find in this collection (belonging to professor Meissner of Berne) the teeth of a mastodon and those of animals of less size, enveloped in the coal of Anspach (if I do not deceive myself) near the lake of Zurich. Mr. Meissner informed me that one stratum of coal occurred in the banks of sandstone (gres.) This is a circumstance which ought to draw the attention of the Swiss Geologists. The fact is certain. The teeth are black, and appear strongly impregnated with bitumen.” (Jour. of Science, No. XIX. p. 199.)

2. The *Magatherium*.

This animal, of which there are two skeletons now in the “royal cabinet of Madrid”, is a most extraordinary creature, for the shape of its body, and the enormously clumsy character of its bones. The skeletons were found in south America, in the “alluvial soil”, and have not been discovered in any other part of the globe. M. Cuvier states it to be “the size of a rhinoceros”; and the Supt. to the Ency. Britannica says, it is *seven* Spanish feet high and *fourteen* long. It is impossible such enormous animals could have been *washed up* by the Deluge out of the “regular rocky strata” and quietly deposited in whole skeletons in the “alluvial soil”! This, therefore, is another specimen of the “*extinct genera*” found in the formations of our *Deluge*. For M. Cuvier classes the “magatherium” with the *megalonix*, and both among the lost genera,—“The *palæotherium*, *anoplotherium*, *megalonix*, *mastodon*, *pterodactylis*, &c. (125, 371.)

III. EXTINCT SPECIES AMONG DILUVIAL OR POST DILUVIAL FORMATIONS.

It is obvious that whatever of an “*extinct*” character is found in diluvial or post diluvial soil, will directly thwart and overthrow this modern Geological Theory. Because every thing *present* at, or since the Deluge must have existed *then*, and cannot have been extinct *before* it. This will apply equally to the extinct “*genera*”—the mastodon and megatherium—of which we have just been speaking. The cases of this description are very numerous.

1. “PEAT BOGS.

(1.) The “fossil elk of Ireland” found in peat bogs. This, M. Cuvier says, “is most certainly a different “species from any of those that exist on the earth’s “surface, and may therefore be considered as extinct. “It generally occurs in shell marl and peat bogs.”— “A splendid and nearly perfect skeleton of this animal “has been lately dug out of a marl pit in the Isle of “Man, and is now preserved in the Regius Museum “of Edinburgh.”—The extreme width of the horns of this stag is 10 feet 10 inches. (372—3.)

(2.) The “*deer of Etampes*” in France, imbedded in the sand, and the “fossil deer of Scania” found in a peat moss, are also instances of the “extinct species” imbedded exactly in the situation of modern animals, and even of man himself. “In peat depositions and turf bogs—the bones of men—may readily enough be found.” (374—6, 129.)

2. *The ELEPHANT AND RHINOCEROS in alluvium and ice.*

(1.) “Only one species of the rhinoceros) has “hitherto been discovered, which differs from the five “living species, not only in structure, but also in

“geographical distribution.” One “near Canterbury —was dug out of the alluvial soil.” And “in Siberia, not only single bones and skulls, but the whole animal, with the flesh and skin, have been discovered.” (377—8.)

This animal, however, appears to be still living in Africa. And how many more animals which Geologists call extinct, may be still living upon earth, no one knows.

(2.) *The Tungusian elephant* “appears to have been clothed with fur, and provided with a mane.” “It differs from both of the existing species.” “In the year 1799, a Tungusian fisherman”—saw “it in an ice bank.” “In 1806, Mr. Adams went to examine this animal.” “Ten men” carried away the skin with difficulty. “More than 30 pounds weight of hair was preserved.” “It consists of three kinds”—“bristles, hair, and wool. These (M. Cuvier says) afford undeniable proof, that this animal had belonged to a race of elephants inhabiting a cold region, with which we are now unacquainted, and by no means fitted to dwell in the torrid zone. It is also evident that this enormous animal must have been frozen up by the ice at the moment of its death.” (380, 383.)

Here I must make a few observations.

—Numerous bones of this animal have been found in the “alluvial soil”, in England, Russia, Poland, Germany, France, and Hungary. This proves that the “alluvial soil” and the “ice bank” above mentioned, are of the same epoch of formation.

—The elephant in this “ice bank” is a certain proof that this animal was living as late as the *Deluge*, and

could not therefore be extinct before it. For had this ice bank been there before the Deluge, it would inevitably have been displaced and broken by it. It is admitted by M. Cuvier, and I believe by all, that this elephant was destroyed by the Deluge.

—Hence, then, we have infallible evidence against the very life of this modern “Theory.” Here are “*extinct*” animals present at the Deluge, and destroyed by it. This brings “*extinct*” animals within the range of Scripture, from which we learn that all the “*existing*” animals were also present at the Deluge. Thus, then, (and it is beyond the power of man to disprove it), “*extinct* animals” and “*existing* animals” are of the *same era*, and both are synchronous with the “*human race*.”

—I may observe that the “hair and wool” of this elephant are no proof of its peculiarity of “species”, or that the same species, (as M. Cuvier asserts) could not, by process of time, live in the “torrid zone.” For, under the consideration of “*extinct* animals” we shewed that, since the universal Deluge, numerous animals have become entirely extinct in Asia, and are peculiar to other countries; and that the Negroes and Siberians, who could not *now* interchange countries suddenly without destruction, all, at the Deluge, sprung from one pair, Noah and his Wife. With respect to the wool of this elephant, we know that most animals acquire woolly coats in cold regions, in a short time.

IV. “HUMAN BONES WITH THE EXTINCT ANIMALS.

We know it is the essence of this Theory, that “among the fossil *palaeotheria*, the elephant and the

“ rhinoceros, &c. the smallest fragment of human bone
 “ has never been detected.” (129.)

Every reader of Geology knows the vast importance which is attached to the assumed absence of “human bones” from the fossil strata. In this Mr. Buckland and almost all modern Geologists unite with M. Cuvier. There are *two* points, however, essential to their object, in this matter.

1. They must prove the *truth* of the assumption; which they can never do; for we shall soon see that it is an error.

2. The *fact* must bear *consistently* in favour of their system.

1. Of this last point we shall first say a few words. Allowing that “human bones” are not found among the ancient fossils, what then? The inference, according to this modern Theory, is, that—‘human bones not being discovered among the ancient remains, proves that man did not exist during the epochs of those ancient formations.’—To this I would say, if man did then exist, his bones must somewhere be found at that period, and the Theory gains nothing. But, if the absence of his bones proves the non-existence of man, the absence of other bones will prove the non-existence of animals. We would inquire then whether the bones of *all* animals, which the Theory admits to have then existed, are found with the remains of the “*palæotheria*”? The answer is, no. The bones of the *megalonix* and *mastodon*, two extinct *genera*, are not discovered in the “rocky strata” along with the palæotheria, but, as we have seen in the “alluvial formations.” Therefore the absence of “human

“bones” no more proves the non-existence of man, than the absence of the bones of the megalonix and mastodon proves their non-existence.—But man, we are told, is not found in the “alluvial”, viz. “diluvial “soil” of Professor Buckland. Respecting this we again ask, are *all modern* animals found *only* in the latest soils where man is admitted to be found? No. We have seen that modern animals are found, in all directions, among the extinct species, and even the extinct genera. Then, certainly, where modern animals, man’s allowed co-temporaries, are found there man himself may be found. And again, therefore, the Theory is deprived of all aid from this source.—

2. We shall see that the assumed *fact* is erroneous.

The cautious inquirer will be ready to ask, how does M. Cuvier *know* that no “human bones” have been found among the extinct animals—“the elephant and the rhinoceros”? Was he present when all those bones were found? Or has he certain knowledge that no “human bones” have been deposited in the same formations with the “elephants and rhinoceros.”? In answer to these things, we shall soon see that he knows nothing, or next to nothing about the situation of these respective bones. But the establishment of modern Geology requires positive assertion where proof is absent, or rather, in the face of it.

(1.) “Among the fossil bones discovered at Cronstad, (writes M. Cuvier) the fragment of a jaw, “together with some articles of human manufacture, “was found.” (130.)

This author does not pretend to deny that these

“fossil bones” were ancient remains, and he cannot deny that this was a human “jaw.” He gets over this however, (as he does over every other instance of human bones) by his Theory and his assertions. “It is well known (he adds) that the ground was dug up without any precautions, and no notes were taken of the different depths at which each article was found.” (130.)

On evidence like this, is this modern Theory built ; —a Theory which is to guide the christian world and correct the errors of their Bible ! But where is fairness or honesty in this author ? And if *we* suffer ourselves to be thus deluded, where is our wisdom or our Christianity ! This author tells us, plainly, that a *human* “jaw” “was found among these fossil bones.” Then surely this is positive proof that the *human* bones are as *ancient* as the rest. Where then is the *evidence* that they are not so ? There is none : But M. Cuvier says, there were “no notes taken.”—*No notes taken!* Then M. Cuvier has *no evidence* that this “jaw” was not found in the *deepest* part of this fossil bank. And any Geologist of the reverse opinion, has as much authority to say, the *human bones* are the *oldest*, and to erect a “Theory” upon the assertion, as M. Cuvier has to say they are the more recent ! !

(2.) *Human bones below a rhinoceros.* Mr. Buckland in his *Diluv. Reliq.* quotes from Schlotheim, the following instance.

“In one quarry, the human bones were found eight feet below those of rhinoceros, and twenty six feet below the surface.” This was in a “quarry” where the bones of numerous (even *seventeen* species) of

“existing” animals were “mixed confusedly, not only with one another, but also with the bones of *extinct* animals.” Yet professor Buckland and his author join with M. Cuvier in pronouncing, in the face of as strong evidence as can well exist upon this subject, “that the human bones are not of the same antiquity with those of the” “extinct animals.” (169.)

The following historic fact if it stood alone would absolutely destroy this modern Theory.

“*Remains of art in a limestone formation.*—The following Geological fact is stated by professor Sulliman, as translated from Count Bournon’s *Mineralogy*.

“During the years 1716—8, they were occupied near Aix, in Provence, in France, in quarrying stone for rebuilding, upon a vast scale, of the palace of justice. The stone was a deep grey limestone, and of that kind which are tender when they come out of the quarry, but harden by exposure to the air. The strata were separated from one another by a bed of sand, mixed with clay, more or less calcareous. The first which were wrought presented no appearance of any foreign bodies, but after the workmen had removed the first ten beds, they were astonished when, taking away the eleventh, to find its inferior surface, at the depth of forty or fifty feet, covered with shells. The stone of this bed being removed, as they were taking away the sand which separates the eleventh bed from the twelfth they found stumps of columns and fragments of stone half wrought, and the stone was exactly similar to that of the quarry. They found moreover coins, handles of hammers, and other tools, or fragments of tools, of wood. But that

“ which principally commanded their attention was a
 “ board, about an inch thick, and seven or eight feet
 “ long ; it was broken into many pieces, of which none
 “ were missing, and it was possible to join them again
 “ one to another, and to restore its original form which
 “ was that of the boards of the same kind used by
 “ masons and quarry-men ; it was worn in the same
 “ manner, rounded and waving on the edges.

“ The stones which were completely or partly
 “ wrought, had not at all changed in their nature, but
 “ the fragments of the board and the instruments of
 “ wood had been changed into agates, which were very
 “ fine and agreeably coloured. Here then (observes
 “ Count Bournon) we have the traces of a work exe-
 “ cuted by the hand of man, placed at the depth of
 “ fifty feet, and covered with eleven beds of compact
 “ limestone ; every thing tending to prove that this
 “ work had been executed upon the spot where the
 “ traces existed. The presence of man had then pre-
 “ ceded the formation of this stone and that very con-
 “ siderably, since he was already at such a degree of
 “ civilization that the arts were known to him, and that
 “ he wrought the stone and formed columns out of it.”
 (Journal of Science No. XXIII. p. 191, 2.)

The period or the Theory of this case I cannot discuss. I shall however observe

[1.] If this be an *ancient* quarry M. Cuvier's Theory is destroyed by the admission ; because it allows *man* to be an *ancient* and not a *modern* being. But this would reduce ancient and extinct animals to the age of man and the chronology of the Scriptures.

[2.] If it be post diluvial and comparatively *modern*,

there is not the least reason to suppose, from the nature of the formations, that the Paris formation, and even the "coarse shell limestone" below the *palæotheria*, may not be modern also. And thus, M. Cuvier's worlds before worlds in the Paris basin, may be all only works of yesterday! For an extinct palæotherium in a Paris basin, proves no more than an "extinct elk" in an Irish bog. In every place, therefore, this system dies before our face.

V. THE FOSSILS OF MONTE BOLCA IN ITALY.

These, from their singularity and importance, I shall here place as the last instance I wish to produce. This hill, if there were not another objection, would by its own evidence alone, shatter this modern Theory to atoms. For every part of the Theory, and every one of its pretensions and assumptions, are expressly and directly disproved by the fossils here collected.—There are fossils of *all sorts*, of all *climates*, and of all epochs, *ancient* and *modern*. These are the celebrated fossils of *Verona* before alluded to.

"There have been found 27 genera of Testacea, hitherto unknown; and not less than 200 species of petrified shells have been dug up.—By a wonderful accumulation, shells whose animals inhabit different seas and different climates, are collected together in the same heap, along with those which never retreat to water."—"It would seem as if the whole seas and rivers of the globe had concurred in depositing their contents. Those of Europe, Asia, Africa, and America, are huddled together in one confused heap: the fishes of the torrid zone are mixed with those of temperate climates; those of fresh-water rivers with

“ those of the most extensive seas ; and all differing
 “ in habits, structure, and properties.”—“ Most of the
 “ fishes of Bolca are such as now inhabit the European
 “ seas, but there are some species peculiar to the rivers
 “ of India and America exclusively, while there are
 “ many belonging to the fresh-water streams of our
 “ own and neighbouring countries.”—Five species of
 “ *chaetodon*” are enumerated as found in Monte Bolca,
 such as are *now* occupying the “ rivers” or “ seas” of
Arabia, India, Brazil, Africa, and Japan.—But “ the
 “ fishes of Mount Bolca are by no means confined to
 “ genera and species now extant ; for various specimens
 “ have appeared hitherto undescribed, and which are
 “ still unknown. The *uranoscopus rastrum*, so called
 “ in its fossil state, has never been seen as a living
 “ animal.”—“ A young shark” “ disclosed in the con-
 “ tents of its stomach” “ half digested” “ sea crabs.”
 “ Two fishes printed on the same stone, one of which
 “ has seized the head of the other, and seems in the
 “ act of swallowing it.” ^m

“ Entire skeletons” “ of whales and dolphins” “ have
 “ been discovered at the elevation of 1200 feet above
 “ the sea.”—“ In this unaccountable aggregate, the
 “ parts of terrestrial quadrupeds of birds and of insects
 “ are not wanting.”—“ Along with fishes, the strata
 “ of Bolca contain leaves of trees, terrestrial plants,
 “ fruits, and flowers, and even some winged animals.”
 —“ Terrestrial remains of the hippopotamus, elephant,
 “ rhinoceros, mastodon, urus, elk, and horns of stag ;
 “ and—vegetable remains, consisting of trunks and
 “ fragments of trees, together with leaves but little

^m Edinburgh Encyclopædia, article Bolca, p. 642—4.

“altered, fresh-water shells, and fragments of travertino, or alluvial rocks.”ⁿ

Respecting the description of the fossil bones and fossil strata of Monte Bolca, and perhaps the Appenines in general, Dr. Macculloch calls it an “ex-ample of erroneous observation and reasoning”; and M. Cuvier says, these fossils have been “improperly named”; (Reference as above.) We may probably notice Dr. Macculloch’s explanation of the phenomena of Mount Bolca, under the consideration of the physical state of the strata. In the mean time let it be remembered that the above is the statement of *fact*, and *phenomena* as they present themselves to the examiner, and as they are given to us by the above authorities themselves; (from the Geologist, Signior Brocchi;) all of whom are dissatisfied with the *case* as it stands.

It is obvious that every part of the above statement of the fossils of Bolca is utterly inconsistent with the Theories of modern Geology; and *that* is the only reason that I am aware of, which makes our authors object to the description. Neither M. Cuvier nor Dr. Macculloch have personally examined these fossil strata. But they both take the liberty of finding fault with the *phenomena*, as here described. They assume their Theory, and then correct facts by their Theory. In this way, however, we may deny any thing, however true, and prove any thing we please, however erroneous.—M. Cuvier says they are “evidently” “sea-fish”, “but improperly named” (I suppose) fresh-water fish also. “*Fresh-water*” among “*sea-fish*”

ⁿ Jour. of Science, No. XXVIII. p. 291, —2. and M. Cuvier, p. 181, —2.

would destroy his Theory. True; and so do the *Northern* and *Southern* whales and fishes;—so do the *land* animals, birds, and vegetables;—so do the *extinct* elephant, mastodon, &c. *along with modern* animals and fishes in these strata which, it is M. Cuvier's opinion, contain the true secret of the *last* operations of the sea"! So does the fact that "most of the fishes *now* inhabit the sea", while there are "*twenty seven* GENERA" of shells, "*hitherto UNKNOWN*", all heaped together in one mass!!!

I may now leave the reader here to his own reflections. These examples afford, upon every principle of fairness and equity, as *positive* evidence *against* this Theory, as its most enthusiastic admirers ever pretend to have witnessed in its favour. But when the *nature* of the evidence is taken into account, we are filled with astonishment at the boldness of modern Geologists. The best evidence upon which their system is built, is wholly *negative*, and can never, therefore, arrive at *positive* proof; while every instance, such as we have produced, is *positive* destruction to it.—I shall just recapitulate a few of the mixtures, from which direct demonstration arises against this Theory.

1. The "*human jaw*" among the *ancient* fossils.
2. The *human bones* in the stone "quarry" eight feet *below* those of the *extinct* rhinoceros.
3. The *pillars* and *tools*, &c. under *ten* strata of limestone, along with *shells*.
4. *Extinct* animals and *man* in peat bogs.
5. The *elephant* and *rhinoceros* in the ice.
6. The *whole* system of mixtures contained in Mount Bolca.

These instances, (with numerous others which might have been produced) even in the comparatively small space of the "fossil strata" with which we are acquainted, are perfectly satisfactory to an unprejudiced mind, and strictly demonstrative of the error of this modern system of Geology.—If any, (for the sake of making a desperate effort and a last struggle to relieve this Infidel Geology from this fatal dilemma,) should choose to say that the modern remains, and the "human bones" which have been discovered "among the extinct" fossils, have been deposited where they are found, *since* the Deluge, and not by it: I would answer, that this, (though in many ways utterly absurd,) would not, if admitted, alter the case in the least. Because it is the very essence of this "Theory" to prove *successive* epochs of formation from the respective fossil remains which the deposits of each successive revolution contain. Those animals then which were present at the same revolution, are not successive,—are not older and younger, not ancient and modern—but synchronous and of the same age.

Most certainly, therefore, the extinct elephants of the North, and the extinct animals of Bolca, &c. are of the same age with man. For M. Cuvier (and every one else) admits, that "these elephants in Siberia were drowned and frozen up in the waters of the Deluge, or the last and universal revolution. It is evident also, as well as allowed by M. Cuvier, that Bolca was not earlier. And we have the infallible word of God to assure us, that man was present at the Deluge, and was destroyed by it. Then most certainly these *animals* and *man* were destroyed by the same flood, and their remains are certainly of the same age.—It is

therefore perfect nonsense and folly pretending to dispute that this or that human bone is not so old as these animals' bones. For absolute and undenied fact shows, that these animals were not extinct earlier than the Deluge, and the word of God assures us, that man was infallibly destroyed by it. In spite, therefore, of all the Geologists in the world, "human remains" are as old as those animal remains, and this Theory is demonstrated to be absurd and erroneous!!!

I have not room here for the examination of the celebrated "*human skeleton*" imbedded in solid rock in the Island of Guadaloupe. *That*, however, we hope to prove to be of diluvial origin also. In which case, Geology cannot well pretend to have found a more ancient fossil upon earth.

M. CUVIER'S ADMISSIONS.

The reader now is perfectly aware, that upon an assumed knowledge of the real situation of the "fossil remains" in the respective strata, this "Theory of the earth" is built. And that, without such knowledge, the very pretence of making a naturalist's skill in "comparative anatomy" a foundation for proving "numerous revolutions" in the earth from the "fossil strata", would be a gross imposition upon mankind.—We will now however make known, from M. Cuvier's own acknowledgment, the real truth of this case.

1. Admissions respecting the SITUATION of the fossils in the strata.

"It must not, however, (writes this author) be thought that this classification of the mineral repositories is as certain as that of the species, and that it has nearly the same character of demonstration.

“ Many reasons might be assigned to shew that this
 “ could not be the case. All the determinations of
 “ species have been made, either by means of the bones
 “ themselves, or from good figures ; whereas, it has
 “ been impossible for me personally to examine the
 “ places in which these bones were found. Indeed, I
 “ have often been reduced to the necessity of satisfying
 “ myself with vague and ambiguous accounts, given by
 “ persons who did not know well what was necessary
 “ to be noticed ; and I have still more frequently been
 “ unable to procure any information whatever upon
 “ the subject.” (111, 112.)

Such are the words of M. Cuvier. Respecting these I would say, that an author cannot build a Theory upon better information than he possesses. This “ *Theory*” then, which is to establish a new philosophy and change the faith of christians, is built upon “ *vague and ambiguous accounts*”, not on knowledge “ *personally*” acquired, respecting the situation of “ fossil remains”, but on the information of persons ignorant of the subject, and “ *still more frequently*” upon no “ *information whatever*” !!!

Now every person acquainted at all with the pretences of modern Geology, knows perfectly that the whole edifice rests entirely upon these two points ;—
 1. “ The extinct genera and species”, which comparative anatomy has enabled M. Cuvier to discover ;—
 and, 2. The knowledge of the situation of these extinct animals in the strata, demonstrating successive revolutions.

After this author however, has produced by his bare and unsupported assertions, the conviction to which truth alone can lay claim, he immediately turns about

and acknowledges that, after all, he knows next to nothing about it.—Instead of stating those feelings of disgust and disapprobation, which a discovery of such imposition is calculated to inspire, I will institute the following analogy. As this is in fact, although not in profession, a contest between Infidelity and Divine Record, let us take, for instance, Moses and Joshua. Suppose

MOSES, as we learn he did, had told the Israelites and recorded it for our information, that God smote the Egyptians with ten plagues, and that the Lord's people possessed all that time, peace, health, and enjoyments;—That Moses performed divers miracles “before Pharaoh, and before his servants”, and ultimately brought out his people from Egypt, but overthrew the Egyptians in the Red Sea;—That He carried them 40 years through the wilderness, preserved their health and strength unimpaired, and their clothes from wearing out; and after leading them from place to place, conducted them safely, even 600,000 men, besides women and children, over Jordan into the land of Canaan:—And suppose Moses had appealed to all this multitude in the following words;—

“O Israel,—did ever people hear the voice of God speaking out of the midst of the fire, as thou hast heard, and live? Or hath God assayed to go and take him a nation from the midst of another nation by temptations, by signs, and by wonders, and by war, and by a mighty hand, and by a stretched out arm, and by great terrors, according to all that the Lord your God did for you in Egypt *before your eyes.*” “Your *eyes have seen* all the great acts of the Lord which he did.” “How He made the

“water of the sea to overflow the army of Egypt.” And “how the earth opened her mouth and swallowed “up” “Dathan and Abiram” :—

Add to the above, that Moses wrote the *places*, and *names*, and *facts* which occurred, viz. that the “children of Israel took their journey” to Horeb, and Sinai, and Merribah,—that “at Taberah, and at Mas-sah, and at Kibroth-hattaavah”, they “provoked the “Lord”,—that they went “from Beeroth to Masera ; “there Aaron died, and there he was buried” ;—and further, that Joshua wrote after the death of Moses, that “there arose not a Prophet since in Israel like “unto Moses, whom God knew face to face, in all “the signs and wonders which the Lord sent him to “do in the land of Egypt, to Pharaoh, and to all his “servants, and to all his land, and in all that mighty “hand, and in all that great terror which Moses shewed “in the sight of all Israel :—and further ;

Suppose now, after all this, and a vast deal more, had been said and written by *Moses* and by *Joshua*, with equal minuteness and with assured confidence, for the sake of making out an extraordinary history and getting to themselves a name, as the founders of that extraordinary nation, the children of Israel ; and that by their consummate skill and management, Moses and Aaron and Joshua had compelled their most powerful and cunning adversaries to declare unto Pharaoh—“THIS IS THE FINGER OF GOD :” But suppose, now, these writers, after all was recorded and fully established as to facts, places, and circumstances, had inserted respecting this history, as M. Cuvier has done respecting the “fossil remains,” and had, after all their assurances, confessed ;

‘ It must not, however, be thought that this classification of the various *routes* and *miracles* is as certain as that of the people, and that it has nearly the same character of demonstration. Many reasons might be assigned to shew that this could not possibly be the case.—‘ It has been impossible for me *personally* to examine the places where these things are said to have been done, or to testify ‘*personally*’ to the truth of the facts and miracles which I have recorded; and with regard to the *information* respecting them, ‘ I have often been reduced to the necessity of satisfying myself with *vague* and ambiguous accounts, given by persons who did not *know* well what was necessary to be noticed; and I have still more frequently been *unable to obtain any information whatever upon the subject.*’

What would M. *Cuvier* have said to such conduct as the above, had it been found necessary to support their scheme, and had it been resorted to by *Moses*, *Aaron*, and *Joshua* for the purpose of establishing their pretensions among men? He would doubtless, have said, and said justly, that, though the *history* of the Israelites might have some correctness about it, ‘ the *Theory* of *Moses*’ respecting his *divine mission* and his *Miracles*, was a mass of falsehood and forgery!—I shall leave it to the reader to say, what is the language in which a *similar* conduct, respecting *modern Geology*, ought to be described.

2. Admissions respecting SUCCESSIVE FORMATIONS. Though the proof of numerous *successions* in the fossil formations is the *sole* object in the adduction of fossil remains, M. *Cuvier*’s evidence of successive formations fails him worse than respecting their situation.

“ Secondly, (M. Cuvier adds) these mineral repositories are subject to infinitely greater doubt, in regard to their successive formations, than are the fossil bones respecting their arrangement and determination.” “ It rarely happens that the people who found these bones were aware of” “ what was necessary to be noticed,” “ and consequently the true characters of their repositories have almost always been overlooked or misunderstood.” (112, 113.)

3. Admissions respecting MIXED SPECIES,

“ Thirdly, there are still some doubtful species of these fossil bones, which must occasion more or less uncertainty in the result of our researches, until they have been clearly ascertained. Thus the fossil bones of horses and buffaloes, which have been found along with those of elephants have not hitherto presented sufficiently distinct characters.” (113.)

I need only here observe that modern Geology has not an *atom of evidence*, nor indeed any *pretence* to evidence, from fossil quadrupeds, but upon the supposition that their *SITUATION* in the strata is accurately known,—that they are free from all *INTERMIXTURES*,—and that “ *SUCCESSIVE FORMATIONS*” are clearly and distinctly observed.

1. Now with respect to their *situation*, it stands confessed, it is “ often” “ vague and ambiguous,” and “ more frequently” without “ any information whatever ;” viz.—it is *entirely unknown*.

2. With respect to “ *successive formations*,” “ the true characters of the mineral repositories”—(which are the sole indications of “ successive formations”) “ have almost always been overlooked or misunderstood.”

Of *intermixtures*, (*each* of which is death to this Theory) it is confessed that more or less, they are every where found. We have seen, that existing animals are mixed with the ancient or “extinct genera,” and “extinct species;” — that “extinct genera” and “extinct species” were present at the Noahic Deluge and mixed in the strata with “existing species” and even with man himself;—and that the extinct species (as Geologists call them) are intermixed with the extinct genera on the one hand, and with the existing species on the other, in almost every direction!!!

Instead, therefore, of the support of evidence and facts, which, to establish this Theory, ought to be universal and consistent throughout the whole line of argument and investigation, evidence and facts in every department singly, and in the whole conjointly, pierce the Theory to the heart! Many reflections I need not make, on a scene like this: Two, I cannot avoid.

FIRST. Those professors of science who wish (upon a foundation like that we have been investigating) to establish a system of scientific and experimental Geology, as a true and demonstrated “Theory of the earth,” degrade, not to say, disgrace, the character of philosophy. And

SECONDLY. Those divines and believers in Revelation, who, in compliance with such scientific professors and with a system of Geology so established, endeavour to explain away the plain and obvious meaning of the divine record of creation, degrade the testimony of the Most High, and dishonor the christian name.

CHAPTER VI.

GUADALOUPE SKELETONS.

I am of opinion that the discussion of the subject of the skeletons which have been recently discovered at Guadaloupe in the West Indies, (which we have reserved for separate consideration,) may lead to very important conclusions. If modern Geologists can make such specimens of "fossil remains" as these consistent with their Theory, no doubt it will turn to some account. If, however, they should be found to give evidence opposed to the modern Geological Theory, it must still be admitted that their testimony is very important into whichever scale it falls.—M. Cuvier, as we have before seen, unhesitatingly declares that the rock in which they are deposited, is

“—Nothing else than a tuff formed and daily augmented by the very small debris of shells and corals which are detached from the rocks by the waves, and of which the heap attaches itself firmly to the parts which are most frequently dry.” (note in p. 130.)

In the *text* of the same page, he says, the “human skeletons discovered at Guadaloupe, in a rock formed of pieces of madreporé thrown up by the sea, and united by water impregnated with calcareous matter”, are of the character of those fossils which are only “modernly formed, and covered up by incrustation.”—He further tells us, that,

“Formations of this kind are common in the whole archipelago of the Antilles.—Their augmentation is proportioned to the violence of the surge. They have extended the plain of Cayes to St. Domingo, and the debris of earthen vessels and of other articles of human fabrication, are sometimes found at the depth of twenty feet.” (130—1.)

Mr. Jameson adopts M. Cuvier’s opinion respecting the formation of this skeleton. “It is (he says) imbedded in a block of calcareous stone, composed of particles of limestone and coral, and which, like the aggregations of shells found on the limestone coasts in some parts of this country, has acquired a great degree of hardness. It is therefore an instance of a fossil human petrification in an alluvial formation. (357.)

Thus we learn that this fossil deposition is only an “*alluvial formation*”, and, “*like the aggregation of shells*” on our own coasts.—Now, after very long and very laborious consideration of this subject, I have formed an opinion precisely the reverse of that which M. Cuvier and Mr. Jameson have expressed. And I will endeavour to put the reader into possession of my views on this point; requesting him, however, to exercise both patient examination and a discriminating judgment.

I. THIS "TUFF",—or rather, this "limestone rock",—appears to be of the same *nature* with the *Island itself*; at least with that part of it which is on this coast. *M. Cuvier* gives us the following information on the subject of this formation.

"The human skeletons discovered in Guadaloupe" were imbedded "*in a rock formed of pieces of madre-pore*"; and again, the "rock" is *entirely* "formed of pieces of coral and compact calcareous stone"; and "that most of those fragments have the same red tint (when examined by a glass) as a part of the corals contained in the reefs of the island." (131, —2.)

Same as the "*reefs*" of the Island. If *M. Cuvier* means to *confine* these corals to the "*reefs*", or sand thrown up by the waves, it is both partial and unfair. They are of the character of the "*rocks*" of which the *island* is greatly formed.—

Mr. Maclure, in his "Geology of the West Indies", (*J. of Sci.* vol. v. p. 311.) informs us, that Grandterre in *Guadaloupe*, (not very distant from which, this coast seems to be) is,

"All formed of the madre-pore rock in horizontal strata, resembling the *same* formation in Barbadoes—but *not rising so high*."—Respecting *Barbadoes*, he further writes;—"The northern, southern, and western sections of this island, consist of rocks formed of an aggregate of shells and madre-pore rocks, mixed with different kinds of corals,—shell limestone rising gradually to the height of 800 feet."—"He *adds*;" "All the islands that have been described have a striking similarity both in their structure and in the nature of their materials; those that are partly, or

“wholly covered with horizontal shell limestone, or madre-pore rocks, are exactly the same.”

From the above extracts it appears that the hills of these islands,—*several* 100 feet high,—are formed of coral or madre-pore rocks, and that this *identical rock* is formed of the *same materials*.

Another thing to be observed is this. The *height* of these rocks forbids our ascribing *their* elevation either to “corals” or to the *sea*, as to a modern formation. For *corals* never work *above* the *water*; and it is certain the *waves* never washed up these *rocks* many hundred feet high above their own surface!!

M. Cuvier does not give us any mark of distinction between *this rock* which he calls a “tuff” and the *native rock* upon which he says it rests. But surely if the *one* be “thousands of ages” old, and the *other* but “of yesterday”, there will be, of necessity, a line of demarkation sufficiently strong, to be known and observed by every one.

Beside, there is another thing remarkably against M. Cuvier’s notion of a *tuff*. If this *tuff* were formed of pieces of debris washed from *other* parts of the coast, it would be *mixed* up with the *volcanic* substances of which some of the rocks consist, as well as with the *madrepore*; and the *new formation* would exhibit a *new nature*. But of this we hear nothing, notwithstanding our author’s anxiety to find out a *distinction* between this “*slope*” and the *rocks* of the island.

We must not forget that some of the writers on the West Indian islands ascribe to these rocks the character of those called “transition” rocks, which are considered by our Geologists as the *oldest secondary* rocks in existence. And it is somewhat remarkable, that Professor

Jameson, in the description which (in his notes on M. Cuvier) he has given of the fossil remains in the "TRANSITION LIMESTONE", has classed "MADREPORITES" the first among the fossils it contains. Now, "madreporites" are fossils contained in this rock, and in the very block of this rock, which embraces this skeleton!!

It does not appear that any of the "*limestone rocks*", in which the *palæotheria* are found, in the gypsum quarries, have any thing like the characteristics which *this block* of stone possesses for hardness and durability:— On what *evidence* the writer of the article, "Organic remains", (p. 79.) in the Supplement to the Ency. Brit. asserts relative to this *skeleton*, that "*the rock, on examination, proved to be a mere alluvial mass, formed of pieces of coral*", he does not inform us. M. Moreau de Jornes indeed "*thinks*", the persons perished by shipwreck. But he has given *no evidence* for such an opinion.

The inference then, I presume, is manifest and conclusive. Namely; that as *this rock* is of the same character with the *island itself*;—as moreover, these *islands* are far too elevated to have been formed by the usual mode of *coral islands*, which have no means of rising more than a few feet above the sea; we may be very sure that *this rock is not a modern formation*.

I may here ask, if this rock be a "*tuff*" formed by the sea, and *daily augmented*", how came it to be only *now* discovered, when every day's addition of debris would add to its covering and *concealment*?

We must remark that *this rock* (as appears from the above quotations) which incloses this skeleton, is not only a hard, compact limestone rock, but is of the very

character of the *limestone*, which is sometimes called "*shell limestone*"; and which actually contains various specimens of those very shells and limestone formations, respecting which, M. Cuvier speaks so much in his Theory; and among which he most confidently affirms, no *human bone*, or indeed *quadruped's bone*, did ever enter. But *here* we have a *human skeleton*!!—But we have further evidence.

II. THE SITUATION OF THE BONES.

The very *location* of the *bones* demonstrates the utter impossibility of this rock's being formed by a slow and long process of the sea, which M. Cuvier's notion of a "*tuff*" requires. I feel the most perfect confidence, that nothing of the nature of "*debris*", cast up by the *present sea*, can effect the formation we contemplate, or account for the *phenomena* attendant on this skeleton.

1. This "*human skeleton*" is imbedded in the rock, *lying upon its back*, but somewhat *inclining* towards the *right side*.

2. The *head*, the *neck*, and *both* the *scapulæ*, with the *upper* part of the *arms* are wanting, and *some* parts of the *hands* and *fingers*.

3. The *body* is much *fractured* and *dislocated*. The *ribs* on the *right side* are broken, and carried along with the *sternum* over to the *left side*, where they lie imbedded *edgewise* in the stone, so that the *spinal* column is visible in all its length.

4. The lower part of the *right* arm bones,—some of the *fingers*, of the right hand,—and greater part of the *left* arm and *hand* are found. *They are lying on, or attached to, the bones of the pelvis, much where they*

would lie naturally, if the body had been quietly laid out, with the hands resting upon it.^o—But,

5. “Both the rows of the bones of the wrists are lost,” and some of the fingers.

6. “The whole metacarpus of the left hand is displaced, together with part of the bones of the fingers. “The first joint of the fore-finger rests on the upper ridge of the os pubis; the two others are situated at the inner side of the femur.”

7. “Vestiges of three of the fingers of the right hand are likewise visible, considerably below the lower portion of the fore-arm, and close to the upper extremity of the femur.”

8. “The os sacrum,—is dis-united from the last vertebra and ilium, and driven upwards.”

^o “The situation of the skeleton in the block was so superficial, that its presence in the rock on the coast had probably been indicated by the projection of some of the more elevated parts of the left fore-arm.”

“The vertibræ of the neck were lost with the head. The bones of the thorax bear all the marks of considerable concussions, and are completely dislocated. The seven true ribs of the left side, though their heads are not in connexion with the vertibræ, are complete; but only three of the false ribs are observable. On the right side, only fragments of these bones are seen; but the upper part of the seven true ribs of this side are found on the left, and might at first sight be taken for the termination of the left ribs, as may be seen in the drawing. The right ribs must therefore have been violently broken and carried over to the left side, where, if this mode of viewing the subject be correct, the sternum must likewise be concealed below the termination of the ribs. The small bone dependent above the upper ribs of the left side, appears to be the right clavicle. The right os humeri is lost; of the left, nothing remains except the condyles in connexion with the fore-arm, which is in a state of pronation; [i. e. with the palm of the hand lying inwards towards the body;] the radius on this side exists nearly in its full length, while of the ulna the lower part only remains, which is considerably pushed upwards. Of the two bones of the right fore-arm, the inferior terminations are seen.” (358, 359.)

9. "The left os ilium is—shattered, and *one* of the *fragments* depressed *below the level* of the rest."

10 "On the right side, the os innominatum is completely shattered, and the *fragments* are *sunk*."

11. "The *thigh* bones and the bones of the leg of the right side are in good preservation."

12. "The portion of the stone which contained part of the bones of the "feet" was broken; "but the separate fragments are preserved." (p. 358—360.)

The above extracts are taken from Mr. Jameson's notes annexed to M. Cuvier's Theory. But the *description* of this "fossil skeleton" is given by Mr. *Konig* in whose department in the *British Museum* this skeleton is deposited; and the description has been drawn up "with great care." (note in p. 131.) It was inserted in the *Phil. Trans.* of 1814.

I have disjointed, marked, and *numbered* the various branches of this description, for the purpose of easy reference and for the sake of perspicuity, and have given the original in a note. There are some particulars which the reader will please to notice with great care, respecting the situation of these bones.

1. Some bones are violently *broken*, torn away, and *lost*. This appears from numbers 2 and 5 &c.

2. Others are *separated* from their attachment to the body, but still remain *in their places*. 4.

3. Others again, are *detached* and removed a *little out of their places*, but are still remaining, as is seen in 6 and 7.

4. The whole of the sternum is driven over to the left side, where it lodges. 3.

5. Others again, are elevated or *depressed* below *their level*. 8, 9 and 10.

A due attention to the location of these bones will I think, convince any intelligent and unprejudiced reader that, without a miracle, it is impossible this skeleton could have been deposited in a "tuff" by debris slowly and gradually thrown up by the sea. M. Cuvier specifies no time which he supposes the tuff to have taken up in being formed. The Journal of Science supposes it might have been deposited in a few centuries, or even less.—I am satisfied with any thing that can be called, *slow and gradual*. And any thing *short of this* would be instant death to every thing which is essential to the character of a *tuff*.—The position then which we must establish is this ;

The phenomena attendant upon this skeleton could not be effected by the slow and gradual process of the sea throwing upon the coast "the very small debris of shells and corals which are detached from the rocks by the waves, and of which the heap attaches itself firmly to the parts which are most frequently dry."
130, 131.

For the sake of avoiding complexity and confusion I would beg the reader's attention to three points ;

1. To the circumstance of the *scapulæ* or *shoulder blades*, and upper part of the arms which are *gone*.

2. To the circumstance of the *lower part* of the *arms*, and *hands*, great part of which are remaining.—And

3. To the circumstance that *pieces* of the bones are *depressed and sunk below their level*.

Now the following propositions immediately result from the above statement. Which propositions (made upon the supposition of a *tuff*) will shew the real inconsistency and absurdity of the supposition on which they are grounded.

The *scapulæ* must have been removed and the upper part of the *arms broken off* from the shoulders and from the lower parts of the arms as soon as the skeleton became *stationary in this place, and before any considerable incrustation took place.*

—In consequence of which, the *hands* and lower parts of the arms, must have lain *loose* from the body during almost the *entire period* of the process of formation, even if that period were a hundred or a thousand years !!

As however this second proposition is utterly inconsistent with the existence of a *tuff*, and is quite impossible and absurd, as every person of common understanding will immediately see, I shall shew the truth of those facts which infallibly prove it must on this Theory, be necessarily so.

I. The first proposition is almost self-evident from the foregoing statement. And the second depends upon the first. They are *both* indeed proved in one sentence. The *scapulæ* are the *lowest* or under part of the skeleton, (when lying as here on its back) and the *hands* are the *highest* part, when lying as they here do *on the body.* Therefore the *scapulæ* must have been taken away at first, and the hands have remained the latest, unimbedded. If this be not plain enough at first sight the process is direct and easy.

The scapulæ were certainly removed in the early stages of the deposit.

1. Because the skeleton is upon its *back*, and always must have lain so from the very first, when it became fast in the debris.

2. Because the *scapulæ* upon which alone the arms are suspended, (and therefore they must at first have been *present*, or the *arms* would not) being *behind* the back, must necessarily have been *under* the body, and therefore would be first imbedded and *fastened* by the debris.

3. They must then have been *removed* before they became imbedded and fastened in the rock, and therefore in the very earliest stages of its deposit.—This *first proposition* then is as direct and certain as a proposition in Euclid.—Then

II. Both *hands*, (for they are so far exactly similar,) must have been infallibly separated from the shoulders, and loose from the beginning of the incrustation.—

This is perfectly clear, because the hands have *no* connexion with the body but by the *scapulæ* which we have shewn must have been removed from the commencement.

Both the *arms* are also *broken*, the left arm *above*, and the right, *below* the *elbow*. *These arms* were both broken and their upper portions removed at the same early period with the *scapulæ*, or immediately afterwards. At least before any part became seriously imbedded or fastened.—This is evident,

1. Because the *scapulæ* to which alone the arms are attached being removed the *ossa humeri* or upper part of the arms, having *no support* at the shoulder, must of necessity have become *loose* and would therefore lie on the rock. And the *hands* having no support would instantly fall off from lying on the body.

Or, if we suppose the *hands* to remain on the body, it is certain the *arms* from the shoulders to the elbow having no support, and being therefore perfectly loose, would fall *on the rock*.

2. Then the upper part of the *arms* would have become immediately imbedded and fastened. They must therefore have been *broken off* and carried away in the early stages also.—Then

3 The hands and lower parts of the arms must therefore have been loose also from the early stages of the deposit. And from their *lying upon* the body, those parts of the hands would be the *last* to be *imbedded*, being *furthest from the rock*. Therefore,

The second proposition is also proved. *The hands must have lain perfectly loose upon the body during the greatest part of the period of this formation.*

1. This, however, *unless by miracle*, is perfectly and absolutely IMPOSSIBLE, on the supposition of a tuff. It is quite certain that the waves, or any heavy body violently impelled by the waves against this body, could not *separate the shoulder from the body, and break the bones of both arms, and tare them off from the hands, and carry them away, and yet leave the hands which were hence at perfect liberty, remaining quietly behind!!*—Or if it be supposed that these *arm-bones* (which is very possible,) were broken *before* the body became stationary in this place, still the *muscles* or *ligaments* by which they must have been *brought* hither, would take them away again along with the shoulder and the upper part of the arm.

There is *no room* here for supposing that the “*muscles and ligaments*” might soon become *too tender*,

after the skeleton was deposited in this situation, to bear much *violence*, and may therefore be assumed easily to *give way*, if the *bones* were *previously* broken. This could not be said, for two reasons.

(1.) The *scapulæ* and *clavicles*, or collar bones, as we have shewn, must have been removed almost as soon as the *skeleton* was deposited here; and therefore there would be no *time* for the *muscles* to grow particularly *tender*. But,

(2.) What infallibly removes this notion, is this, the part of the *os humeri* of the left arm, which is *broken* off from the shoulder, and *remaining* with the fore-arm, is attached to the elbow, and retained at that joint by the *muscles only*, and this, notwithstanding the violence which has torn away the upper part of this arm. For, what is very remarkable, the *ulna*, or *elbow bone* to which the *os humeri* is naturally locked, by the hollows and projections in each respective bone, by the joint called ginglymus, *is not the bone* in this left arm, to which the part of the *os humeri* which remains, is *appended*. *That joint* is dislocated, and the part of the *ulna* connected by this joint to the *os humeri*, is broken off and lost; while the part of the *os humeri* which remains, and which was previously locked to the *ulna* which is broken off, is appended, at the elbow to the *radius*, with which it is not naturally locked by the processes of the *bones*, but by the ligaments which connect it with the *ulna* and *humerus*. So that the bones hang together by the *ligaments* only.

As many *muscles* and *ligaments* are concerned in the connexion of the upper part of the *ulna* with the *radius* of the fore-arm, below the elbow, and with the

os humeri above it, from *both* which it is *torn off and gone*, while the *radius*, and a part of the *os humeri* connected with it, are *remaining*; nothing short of a miracle could thus fracture and rend away *part* of the *os humeri*, and part of the fore-arm, and leave the lower parts of the arms and hands behind. They would, beyond doubt, have gone with the rest, had they not been detained by a force which overcame that which carried the other parts away.

2. Another thing still more extraordinary, if possible, is the situation in which the *left arm* has been left, when part of the *os humeri* was torn away from it. The *left hand* remains, lying upon the upper part of the thigh bone; but the arm *towards the elbow* is *elevated*, and rises *above the body*. This arm, indeed, rises so much higher than the other parts of the skeleton, that Mr. Konig supposes its "*projection*" above the rock "indicated" the presence of the skeleton. Now, it is quite impossible that this arm could remain for a moment in *this situation*, when the upper part of the arm was gone. Could it rise in the air at the elbow without any thing at the shoulder to support it, and attached to nothing but the *hand*, which was *itself loose likewise*. Impossible!—And, which is additional to this compound miracle, it appears (from No. 5.) that the *bones* of this *wrist* were actually wanting!!

3. Numerous other circumstances of a like nature occur, such as parts of the hands and "*fingers*", and other "*fragments*" of bones dislodged from their places, and lying *upon* the body, or attaching even to the *sides* of the bones. This may be seen illustrated in No. 4, 6, 9, 10.

These fingers, and joints of fingers, &c. were dislodged from the hands either in the very early stages of the process, or afterwards, when the arms were *left* in the situation above noticed. If this occurred while the “*arms*” were *suspended*, as above, *without support*, the circumstance of those arms still *remaining unmoved* while the waters *washed away* some parts of the hands, and removed others from their place, is the more miraculous. If *these dislocations* were effected before, or at the time the shoulders were carried away, they must have lain loose upon, and attached to the body, from its first becoming stationary to its ultimate incrustation, which is absolutely impossible!!

Though it would be easy to prove that these “*fin-
gers*” and “*sunk fragments*” of bones were dislocated at an early period, I will not weary the reader with any further discussion on this point, because the fact is truly demonstrated.—The fact, I repeat, is fully proved, that this skeleton could not have been imbedded in the way our authors suppose, and in a way their Theory compels them to maintain; That is, *by a modern incrustation, produced by the gradual operations of the sea.*

Let us just sum up the evidence. The system of a “*tuff*”, as it respects this skeleton, implies; that,

—The upper parts of the arms were forcibly torn away from the shoulder, and from the hands, leaving both hands, or parts of both hands, *loose behind*. Whatever did this must have exerted a force upon the parts of the arms *remaining* behind, equal to the force which tore the upper part of the arms away. Then these loose hands must have *resisted* that force, and

prevented its taking them away likewise. But being *loose*, they could make no resistance. But they did make resistance, therefore they were *not loose*. But they were loose, by the very supposition of a “*tuff*”, being as yet, *fast* no where. Therefore they were *not so deposited*—they were not formed as a “*tuff*.”

—The *left arm*, without any support or fixation at *either end*, rising at an angle above the body, contrary to the laws of gravity; and, though *without any attachment*, (like an *inclined nine-pin*, loosely resting with one end against the body,) resisting the buffeting of the waves, for an indefinite number of years!

—The “*loose joints of the fingers*” and other “*fragments of bones*”, (some of which required *violence* to dislodge them, See No. 8—10.) were not *carried away* by the “*concussion*” which *removed* them from their places, but were left *loose* upon and about the body for indefinite ages. And though the *first gentle wave*, or *indeed their own gravity*, would have infallibly removed some or all of them, they still *lay* there, or *stood* there, or remained *inclined* there, against the *rage and fury of that sea* which had “*dislocated*”, “*completely shattered*”, and “*violently broken and carried away*” various bones and other parts of the body!!!

I scarcely recollect a proposition in *Euclid* more completely demonstrated (by a *reductio ad absurdum*) than this; viz. that *this fossil rock is not a tuff*”, nor *the gradual production of the modern sea*.

CHAPTER VII.

GUADALOUPE SKELETON. EVASIONS CONSIDERED.

AS the effect of proving the "Guadaloupe skeleton," to be no modern production, will necessarily be the destruction of that "Theory" which rests upon the assumption, "*that no human remains have been hitherto discovered among the extraneous fossils,*" (128) the mind will unquestionably be employed to invent some *evasion* of our foregoing reasoning. Of this I am well aware. But I feel assured that *no evasion*, not absolutely ruinous to the system itself, can be employed.

1. *With respect to the time of the tuff's formation.*

I have no doubt it will be said that the sea is very uncertain,—that the "violence of the surge" differs very greatly,—and that though it is natural to suppose this "tuff" might be many ages or many centuries in forming, still it may have been even much less.

To this I would answer, the objection has been fully *anticipated*. I need, therefore, only add that, though we have necessarily supposed a "*gradual*" progress

in the formation of this rock, we are *now* prepared to melt down this process almost into nothing. I am perfectly indifferent whether our Theorists say this "tuff" was a thousand years in forming, or *one*. Because it is exactly the same in effect. The *bones*, as we have seen them circumstanced, *could not be so left*, any more than they *could remain*, as we now find them, after the lapse of one year, more than ten thousand. Indeed, time alone makes no difference. For the *arms* could not be so broken: and they could *not remain*, as they were necessarily left by the loss of their upper parts, a *single instant* in the modern sea.

2. *Partial decay.*

Some may possibly say, the lost parts might be decayed, or eaten by sea animals.—Doubtless they might. But these circumstances could not cause the *fractures* and *dislocations* of the remaining bones which we witness, and the *partial* removals of others. If fishes had carried away the shoulders, they could not have left the arms; and if the *ulna* had been in *part* decayed, that would not have pushed the remainder out of its place, &c. &c. &c.

3. *An unusually high and violent tide.*

It may possibly occur to some persons, that a very heavy tide, rising unusually high, might cast this body on shore under heaps of debris, and leave it there out of the reach of further annoyance from subsequent tides. But the person holding this opinion, (almost the only one which might naturally be adopted) quite forgets, or puts out of sight, the circumstances of the case. We have seen that the fractures, dislocations, and partial or total removal of *most* of the bones, must

have occurred *after* the skeleton became stationary in its present situation, and *before* it became extensively incrustated in the rock.

Beside, the situation of this skeleton is so far from being out of the reach of further annoyance from the Tides, that it is within the reach of every tide at high water. So that, in fact, none of these evasions will at all reach the case, or answer the design of the persons who resort to them.—The reader, I trust, will see the justice of the following

COROLLARIES.

I. THAT THE SKELETON WAS LODGED IN A MASS OF TENACIOUS MUD AT THE TIME AT WHICH IT BECAME STATIONARY, AND THAT IT WAS NOT COVERED OVER GRADUALLY, OR BY A QUANTITY OF LOOSE SANDY DEBRIS.

The above proposition appears to be only a necessary corollary from the preceding discussion. Many things are here self-evident. Nothing but a *mass of tough mud* could produce the phenomena which are here seen. Because nothing short of a mass of mud could afford weight, tenacity, and yet mobility enough for these operations.—

The mass must have been heavy and tenacious. For, as we have seen, the *shoulders* were torn away before the mud became so *hard* as to prevent their removal; and then, had it been a “*tuff*”, the further effects of the sea upon the remainder, in carrying away the loose parts of the arms and fingers, would have prevented the *existing phenomena*. It follows then, as a matter of course,—that “*this SKELETON*” was IMBEDDED *in a MASS OF TENACIOUS MATTER*,

and not in "very small" loose DEBRIS, which fixes as it DRIES, and hardens by "INCRUSTATION."

II. THE MATTER WHICH DISLOCATED THIS SKELETON WAS NOT AFFORDED BY A MODERN SEA.

1. The *matter* which struck upon this skeleton, and carried away and displaced so many parts of it, while other parts adjoining and perfectly free to move, as the hands and fingers &c. still remained, does not appear to have been the waves of the sea. For waves of the sea, it is evident, would not produce such partial effects. Had they torn and washed away the *fast* bones, they would not have left the *loose* ends remaining.

2. As the dashing of the *waves* could not have been the *cause* which *forced* away the different parts of this skeleton, so it does not appear that moving masses of *mud* could effect their disunion. Mud, like water, moves much too uniformly to produce such partial disjointed effects, as removing the *bones of the wrists* and leaving the *hands* and *arms*; or taking away *only some* of the "*joints of the fingers*" from their places, while others remained.

3. It should seem also, that the *mass itself* did not wave about to any extent, much less *move* and *separate*, and therefore did not cause these dislocations; for then the loose moveable bones would have been disarranged. It is more probable that some hard matter, as fragments of rocks or stones, or perhaps forked branches of trees, &c. were forced over the skeleton as it lay. *These*, though we perhaps know little how they were carried along, or how they produced these effects, would very readily cause every part of the phenomena we here witness. But I should be extremely jealous of running into *hypothesis*, in such hidden matters.

QUESTIONS.

Now the only questions which I suppose can in any way whatever be of use to the modern Geological Theory, are these, viz.

Does the sea now produce these effects?—Are “tuffs thus formed?—Has the sea cast up this weighty, tenacious mass of mud upon this skeleton?

The answers to these questions are numerous, but all in the *negative*. Two or three are sufficient. The supposition involved in the questions is *gratuitous*;—It is *impracticable*:—It would *destroy the “theory, if admitted.*

I. IT IS GRATUITOUS.

M. Cuvier has given us nothing but his “assertion” in proof of this formation being a “*tuff*.” And we have seen sufficient reason to suspect his testimony, in many points connected with this discussion. Besides, the author’s reference to the Cayes of Saint *Domingo*, in proof of the formation of a *tuff*, by the accumulation of sand at *Guadaloupe*, is as preposterous as if he had referred to the *flat* shores of Lincolnshire, where the accumulation of sand is constantly gaining from the sea, in proof that it is doing the same on the *high* coasts, where it is washing down the cliffs every day!!

II. IT IS IMPRACTICABLE.

Suppose we were to admit that a mass of debris was actually now, i. e. recently thrown up together with this skeleton, by one or more tides, could the *phenomena* follow, which this case exhibits to our view?—To this we must answer No. For if this formation be indeed modernly effected, it must either have been formed at *successive* tides, or at *one only*.

1. It could not be cast up by a *succession* of tides ; for in that case, it would shew us that it is the *usual* habit of the sea by which it was produced. But thus we should come directly into a *gradual* production of this deposit, which we have seen is absolutely impossible.—The debris too, in that case must *harden* as it was deposited, or not at all. For if it continued *soft* after one tide and more were cast upon it, soft and wet, it would be more difficult to dry every successive day. And in fact it never could become dry at all, under such circumstances. If we allow it to *set* every day, we come again to *gradual* formations, which immediately destroys our pursuit as before.

2. *It could not be cast up at one tide only.*—For here a mass of absurdities immediately meets us.—We have already shewn that it was not an extraordinary high tide which cast this skeleton on shore, and out of the reach of future waves of the sea. It must then have been deposited here, between high and low water, by *one tide* under a heap of debris sufficient for the phenomena.—If, however, we try this supposition, we shall see it will not answer. For on this hypothesis numerous incongruities arise.—A mass sufficiently deep and heavy to secure the arms and bones from being carried away by successive rushes of the water, must, have been cast upon this skeleton *at once*. By “*once*”, I would here (to prevent all exception or evasion) desire the reader to understand, *one process*, whether it were *one tide or more*, so long as it were effected before the debris, was encrusted or grown hard. For that must have been done, as we before shewed, and indeed is self-evident. For had the debris *har-*

dened before enough was deposited for the purposes of the phenomena, those phenomena never could take place.—Suppose then a mass cast up before any of it hardened about the bones, what must follow?

(1.) The mass must have been very heavy and great.—This is inevitable. For the mass had to retain the hands, arms, and many loose bones from being taken away, when *violence* was done to many parts of the body. And indeed to those very parts, of which portions are left behind. This we have fully shewn. And we have clearly seen that nothing short of a heavy mass of matter could do this. But this mass must have been great and tenacious, in order to keep the arm (as we have seen) erect, the several fingers safe, and many other bones from being forced away.

It is plain that this *could not* be effected by the sea. For, if the sea broke these bones, and disrupted so many parts of this skeleton when lying under a mass of debris, it must have washed off the debris by every wave. For it is, by the very supposition, as yet only *loose* and moist sand cast upon the body. The sea, moreover, would infallibly have carried away, all the loose bones, hands, and arms.—No heap of loose debris, which we can suppose the sea would now throw up, could possibly withstand the effect of the waves upon this skeleton. We have no analogy of any such effect. Indeed, the water alone, most evidently, did not produce these results.—And where shall we find stone, or rocks, or trees, or other rude materials in the present sea, which it could force over this skeleton, to produce these partial and shattering disruptions without sweeping all the fragments away? There is no such thing.

(2.) A mass of debris is inconsistent with the situation of this skeleton.

In narrow seas, rivers, estuaries, and very confined and low places, we hear of large masses of sand being forced up by a peculiarly heavy tide. But this situation has no such peculiarities.—The “steep edges” of the island on which this skeleton rests, forbid the supposition altogether. No mass of debris could rest and “attach itself.” Every tide would wash it away.—It is contrary to the very character of a “tuff”, and destructive of every description which M. Cuvier has given of its formation. He says it is a “tuff formed “and daily augmented by the very small debris of “rocks, shells, and corals, which are detached from “the rocks by the waves, and of which the heap at- “taches itself firmly to the parts which are most fre- “quently dry.” Now, a mass of debris is utterly inconsistent with this history of the formation of a tuff.”

(3.) It is perfectly inconsistent with the character of the history of this skeleton and its *covering*.

It was, when found, only superficially covered with the rock. Now, if the debris had been cast upon it *in a mass*, it would have increased, and the skeleton would therefore have been deeper under the debris than it really was, when it was found. And it must have continued so *permanently*. For the mass must have *resisted* all the efforts of the waves to wash the skeleton away, and it must have preserved the fractured, loose bones also from being removed, which is perfectly impossible with the depth it *now* sustains.

But again. The debris is “daily augmented”, as we learn from M. Cuvier. Let us here remark that

its daily *augmentation* is the *very ground* upon which this author must pretend to say that this rock is formed, and modernly formed *by the sea*.—It either is *increasing*, then, or it is no “*tuff*.” And if it *be increasing*, the absurdity is most glaring. For the heap we have seen, *commenced* upon this skeleton in a *mass*; it has been “daily augmented” since its formation, and it is *nothing even now!* No, not so high as it most certainly was at first, if, in a mass of sandy debris, it withstood the violence of which we have been speaking!!

But further. If this was a mass at first, and has been ever since augmented, it would have become a mountain long ago. Or, it would have been cast heap after heap upon the shore, so that by this time, had it been but a few years ago, it would have made an elevated shore which would have forced the sea, probably miles from the place.—Or, if the sea was too deep for that, it would have washed much of the island from its other parts, and deposited it here, had there been any thing like a power in the present sea of such accumulations, and a daily augmentation of them.—We come then now to recognize the *position* that this “*tuff*” must certainly have been formed either very SLOWLY, OR VERY RECENTLY.

Very *slowly*, we have demonstrated that it certainly was not, and could not be formed.—If *recently*, then all the incongruities, inconsistencies, and absurdities which we have lately witnessed respecting the mass of debris, rock, and sea, will follow.—But the very reverse of all those extraordinary mutations is the fact. The rock is where it ever was,—the skeleton lies close

under the surface,—and the *tide* approaches *now* as *then*, to the “steep edges of the island” itself.—Thus then we have seen, by a clear induction of particulars, that the notion that these phenomena might be produced by the *modern sea*, is QUITE IMPRACTICABLE.

III. IF ADMITTED, IT WOULD SUBVERT THIS THEORY.

If we were to contend, (as every one must contend who supposes the modern sea to have imbedded this skeleton under the circumstances which we have contemplated) that the sea has thrown up vast quantities of debris; has imbedded this skeleton in this solid, excessively hard limestone rock; that the articles of “human fabrication” which have been discovered “twenty feet deep”, are imbedded in a “similar formation”; that is, a limestone rock also; and that this has been done RECENTLY,^p even before our eyes; It is quite certain all this is as perfectly subversive of M. Cuvier’s “Theory” as any thing can be.—We have seen that the very *first position* which M. Cuvier endeavours to establish, and which he assures us is so manifest, that it—“Is the result of the very first search, and of the most superficial examination”, is the following; viz.

“That the sea has—not only—covered our plains, “but that it has remained there for a long time, and “in a state of tranquillity: which circumstance was

^p Debris of “earthen vessels” and articles of “human fabrication” certainly do not of themselves prove that they are of *modern* production. And unless other circumstances evince that the plains of the Cayes have been recently formed, our suppositions respecting the epochs of “human fabrication” are no evidence whatever.

“ necessary for the formation of deposits so extensive, “ so thick, and in part so solid.” (8, 9.)

I beg the reader to notice here that “ *thick*” and “ *solid*” formations make it “ *necessary*” that “ *the sea,*”

1. Should remain “ a long time” on the spot; and
2. “ In a state of tranquillity.”

If to this we add the same Author’s concluding deduction when examining the “ causes which at present act on the surface of our globe,” namely, That “ we have no evidence that the sea has now the power “ of agglutinating these shells by such a compact “ paste, or indurated cement, as that found—even “ in the coarse limestone strata in which the shells are “ found enveloped ;” (in this quotation, LIMESTONE is expressly excepted from modern formations ;) we shall at once see the *fatal* effects of these “ skeletons” upon this modern “ Theory.” (34.)

Mr. *Konig*, moreover, in whose possession this skeleton is deposited, and who has taken great care to develop its true character, has in the Phil. Trans. vol. 104, p. 110, &c. given us the following historic detail.

“ Although there are many instances of gravel and “ sand being *quickly formed into hard masses*, yet we “ *know of no limestone being formed under the eyes of “ men.*” Nevertheless, he “ justly observes ; It may be “ safely concluded, that calcareous rocks, containing “ *bones and shells*, must have been in a *soft, or semi- “ fluid state.*” (G. Penn, Esq. suppl. note, p. 6.)

If, however, the sea have recently deposited this “ limestone rock”, which is not only compact and “ *solid*”, but of “ *excessive hardness* ;”—If, moreover,

“formations of this kind are common in the whole archipelago of the Antilles;—If also these “formations” bury articles of *modern fabrication* “at a depth of twenty feet”, (as M. Cuvier assures us they do) in solid rocks—There is an end of further reasoning upon the subject. Turn which way we will, this Theory cannot possibly stand.

1. *If this “limestone rock” “of excessive hardness” be a recent formation, not only has Mr. Konig misinformed us when he says, we “know of no limestone” “quickly formed into hard masses”;*^a but the very first principles of M. Cuvier’s “Theory” are perfectly *inconclusive and erroneous*.—This Theory requires a *tranquil sea*, and a “*long time*” for the formation of “*solid deposits*.” And he informs us further, agreeably with the said “Theory”, that “we have no evidence that the sea has now” any such “power.”—If this however be a *recent formation*, the whole of these positions have no correctness in them,—they are positively erroneous. For here we have

—A recent formation.

—A genuine “limestone rock.”

—Compact, and of excessive hardness.

—Similar formations, common, extensive, and twenty feet deep.

^a If such formations as this rock be *recent* and “*common*”, and “*twenty feet deep*”, not only a “*hillock*” of “*limestone strata*” may “*now*” be formed, but *strata to any extent*, and to *any thickness!* may be springing up before our eyes, and even limestone *islands* may be now in a state of formation!! There is therefore no room for M. Cuvier, or any one for him, to confine the “*long time*” which his Theory makes necessary for “*thick*” and “*solid*” formations, to mountains which Mr. Buckland supposes, may be “*two miles*” deep. For it does not even appear, that hills two miles deep might not (upon the principles of this tuff) be formed in less than two centuries.

—And a tuff so *expeditiously* deposited, that the sea had no opportunity of washing away, before the rock hardened around them, the hands and loose bones which it dislodged from their places *after* the skeleton became *stationary* but *before* even the parts nearest the rock became encrusted ;—

—And lastly, so *very recently deposited*, that the sea which operates so *expeditiously* has had no time to add to the mass cast upon this “skeleton,” for at this moment we find it but just superficially covered, though it be “daily augmented” “by the waves”!!!

It is quite certain that a principle fraught with more unmixed absurdity than that which makes this “lime-“stone rock” and this “fossil human skeleton” a *modern formation*, is not easy to be found !

2. If this formation be acknowledged *ancient*, which cannot fairly be denied, the character of a “tuff” is done away.

A tuff could not account for the phenomena found attendant upon this skeleton. It was imbedded in a *mass of mud*.—It was *violently rent* while in this situation, yet left in *loose*, and *dislodged* fragments.—The *rock* in which it is imbedded, is a hard *limestone rock*.—The island consists greatly of rocks of the *same* texture, and of the *same* materials.—Nay, *this rock* appears to be even a genuine “*shell limestone*”, because it is identified with the rocks of the island which are so ; and it has nothing in common with those *volcanic rocks* of which other parts of the island consist.

The TWO INFERENCES which I think fairly deducible from this discussion then, are these ;

(1.) That nothing forbids us to ascribe this “human

“fossil skeleton” to the same formation as that of the “fossil rocks or shell rocks of the island. And

(2.) Every appearance leads us with Dr. Maycock to attribute, and we therefore do attribute, the formation of the rocks of these islands to the general Deluge.

ANALOGY.

We have sought in vain for any *analogy* to corroborate M. Cuvier’s “Theory”, which nevertheless, professedly rests upon that evidence. There is no fair *analogy* produced to prove this “human fossil” formation a “tuff”, but full and positive proof is against it.—We have, however, every *analogy* of which the subject is capable, that it is an “*ancient formation.*” Yea, that it is precisely of the same nature, or rather in fact of the same rock, as the *fossil shell formations* of the island.—Hence then, (without anticipating the subject of Diluvial operations) we may not only conclude that this skeleton, as well as the island, is of Diluvial origin and formation, but we may form some slight notion of what nature the MASS was, in which this skeleton and these shells, and by analogy other shells, were originally cast.

These islands being several hundred feet high, could only be formed by ejected matter, modified doubtless by the *diluvial* waters. This matter, heavy and tenacious, would be exactly suitable to the whole process of the phenomena here exhibited.

Again. If the rock containing this “human fossil” be of the *same* character with the “shell limestone” of the island, which there is every reason to conclude it is, it will at once prove the extravagance and folly of referring the formation of the “shell limestone” to epochs immensely *anterior* to the existence of man.

Once more. *Limestone rock* is either modernly being formed or it is not. If it be *not*, this human fossil is not modern; and for aught our Geologists have said to the contrary, we have a right to suppose it to be as genuine and *as ancient a fossil* as any shell or bone in existence. If *limestone* (“madrepore,” “coral,” “shell limestone”) be now forming. The very pretension to assert their *antiquity* from the NATURE of the formation, is perfectly absurd. For if they are now forming they may be all only a modern, or diluvial formation. Then surely common sense, and all *analogy* will teach us to bring down the extravagant antiquity of the “*shell limestone*” to the *scriptural standard*, and to the admitted chronology of the human race.

CHAPTER VIII.

NEW CREATIONS.

THOUGH we have fully demonstrated that this modern geological Theory has no just pretensions to truth in any point of view and that the mixture of the fossil animals, vegetables, and fishes most distinctly prove the unsoundness of its foundation, and that every part of it is positively untrue, yet the reader must know that the *consequences* of the Theory, were it admitted, would effect its entire overthrow. This Theory, we have repeatedly seen, is constructed upon the assumption that “numerous revolutions” in the earth, and different epochs of formation at very long intervals, are demonstrated by the fossil remains in the respective strata:—That “their species and even their genera, change with the strata:”—That “there has been a succession of changes corresponding to those which have taken place in the chemical nature of the fluid:—That the present “existing races of mammiferous land quadrupeds” are not “mere modifications

“ or varieties of those ancient races which we find in the fossil state:”—And that “ from all these well established facts, there does not seem to be the smallest foundation for supposing that the new genera—have ever been the sources of any of our present animals, which only differ so far as they are influenced by time or climate.” To these it adds, as “ extinct species,” “ the fossil elephants, rhinoceros, elks, and bears.” (13, 114, 125.)

The essence then, we perceive, of this “ Theory” is that the chief fossil animals are, genera and species, entirely different from the existing species, and that the “ *existing species*” have certainly not derived their parentage from the fossil ones which have become wholly extinct.—The question then now is, *whence* did the “ *present species*” derive their ancestry? Or have they none? And whence did each successive stratum derive the animals peculiar to itself? for the “ Theory” has it, that they were not the descendants of any of the fossil animals because they are of a different species, or even genus. The question then returns. How did the present races originate?

This question cannot be answered without involving the utter destruction of the Theory. The attentive reader will perceive that we have here a succession of changes—“ changes in the strata”—changes in the “ chemical nature of the fluid”—and “ changes in animal nature” “ corresponding” with those of the “ fluid.” The CAUSES of the changes are unaccounted for: there are three ways in which, it has been attempted.

1. *Atheism* ascribes them to a sort of *animæ mundi*.

Cuvier informs us that Demaillet “conceived the globe to have been covered with water for many thousand years. He supposed that this water had gradually retired ; that all the terrestrial animals were originally inhabitants of the sea ; and that man himself began his career as a fish.” (42.)

Others “suppose that every thing was originally fluid ; that this universal fluid gave existence to animals, which were at first of the simplest kind, such as monads and other infusary microscopic animalcules ; that, in process of time, and by acquiring different habits, the races of these animals became complicated, and assumed that diversity of nature and character in which they now exist.” (43.)

“Other writers—as Kepler—have considered the globe itself as possessed of living faculties. According to them, it contains a circulating vital fluid. A process of assimilation goes on in it as well as in animal bodies. Every particle of it is alive.” (44.)

2. *New creations.*

The very notion of ancient and modern species and genera known by their being found in certain strata, is perfectly absurd but upon the supposition of a *fresh creation* for every modern species. For modern species must certainly have existed along with the ancient species, and been contemporary with them, unless the modern species have been *recently created*. And thus every revolution indicating ancient animals which became extinct by that revolution, must be followed by a *new creation* of a fresh genus or species.

Mr. Buckland, who adopts the essential parts of M. Cuvier’s Theory, when speaking of a time when animals began to be ; writes thus ;

—“ It is demonstrable from Geology that there was
 “ a period when no organic beings had existence : these
 “ organic beings must therefore have had a beginning
 “ subsequently to this period ; and where is that
 “ beginning to be found, but in the will and fiat of an
 “ intelligent and all-wise Creator ? ” (Inaug. Lect. p. 21.)

This reasoning will apply with equal propriety to the “ beginning ” of *every* new race of animals as to the first beginning of animals at all. This Theory proves as well when *shells were not*—then, when they *alone* existed—then, the *reptiles* and *fishes*—next, the *extinct species*—and ultimately the *existing species*. Geology professes to prove when each of these, except present ones, in succession had no existence. “ And where is their beginning to be found ? ”—Mr. Buckland’s answer, (and that of every christian Geologist who views things thus, will be the same,) must be here resorted to ;—It is the “ *fiat* ” of the “ *Creator* . ” But where, we ask, did Mr. Buckland obtain this answer ? How does he know that animals and vegetables derived their “ *beginning* ” from the *fiat of a Creator* ? *Geology*, in its modern character, knows nothing about “ beginning ” either in the *earth* or in its inhabitants. Certainly no Geologist has any more right to say that the “ *Organic beings* ” were not as truly “ the remains of a former world ” as the *earth itself* was. But we cannot pursue this subject in this place.

It is however inevitable that *new creations* must have supplied the earth with every *new species* of animals and vegetables. For according to this “ Theory ” the *existing species* of every successive epoch were not de-

rived from those which *preceded* in point of time. They are not the "same species;" and they had no *existence* during those prior epochs. This is the very essence of the "Theory." It demonstrates the successive revolutions by the succession of the species, which "gradually disappear" till there is no likeness of them remaining among the "existing species." Then no way remains but *new creations*, if we reject the conclusion of Atheism that *nature* has nursed her "monads" and her "animalcules" into quadrupeds and men!

Geology then must be accountable for *all these new creations*. I say *Geology*. But I feel some difficulty to know on what part of its abettors to fix the responsibility. For the association of christians with atheists in this cause leaves the matter uncertain. The preceding dicta of atheism M. Cuvier does not espouse, though he does not reject them, nor "criticise their authors." But he himself never resorts to *any creation at all*, either of the world or its inhabitants. Certainly his scheme, which first meets with shell and lithophites in the strata, and gradually proceeds through all the inferior gradations of "animal life" up to man, is the precise arrangement and progress of the *Atheistic scheme*. The *cause* of this arrangement and progress, whether it be *nature* or *God*, M. Cuvier does not say. But we find that Mr. Buckland, who adapts, essentially, the arrangement, ascribes their "beginning" to the "creator."

Will Mr. Buckland, however, advocate the *consequences* of such a Theory? M. Cuvier's plate, prefixed to his Theory, gives us *eleven* successions of strata in which are found "fossil remains." Must we then

here admit *eleven new creations*, or how? For if the *same species* recur, after some successions, are they newly created again, or where were they preserved, and whence and how brought back?

New creations, however, not a few, there must have been. But these new creations were only made necessary by the destruction of old ones. But there is no *cause in nature* now existing, M. Cuvier informs us, which can account for the revolutions and changes which have taken place. Nor does Mr. Buckland, or any other modern Geologist, even guess at these causes.^r They have then no analogy in nature. There is no cause now in operation which can do any thing like it. Thus those revolutions were truly beyond all natural operations which we know, or of which we ever heard. Then they were of the true character of *miracles*. They required the interference of the Most High. It was “the hand of God.”—The destruction of the former races of animals, therefore, was as truly the handy work of God, as the new creation of their successors.

Hence then, we have arrived at the wanton and wicked notion of the Hindoos, viz. that God has “*created and destroyed worlds as if in sport, again*

^r I have not thought it necessary here to notice the “*volcanic*” causes which the followers of *Hutton* advocate; because that notion seems to be, in England at least, so much discarded, as hardly to require a notice; and because the cause assigned is manifestly inadequate to the effect, and so contrary to every appearance and arrangement of the general fossil strata as to be almost undeserving of a particular notice.—Nevertheless, if any thing more specific which is possible, should come before us relative to Monte Bolca and Dr. Macculloch’s exposition of those peculiar phenomena, the particular application of volcanic influence to that situation will be inquired into.

“*and again*”!! But will any Christian Divine who regards his Bible, or will any Philosopher who believes that the Almighty works no “superfluous miracles”, and does nothing in vain, advocate the absurdity that a wise, just, and benevolent Deity has, “numerous” times, wrought miracles, and gone out of his usual way for the sole purpose of destroying whole generations of animals, that he might *create others* very like them, but yet differing a little from their predecessors!!

3. *M. Cuvier adopts another course.*

M. Cuvier does not indeed inform us, whence he believes animals to have had “their *beginning*”: But he informs us, that the successive revolutions which are indicated by the “animal remains” in the “successive strata”, do not require a “*new creation.*” The reader, of course, will be curious to learn how this celebrated Theorist accounts for the appearance of *modern* animals on the disappearance of *ancient* ones, from which these modern ones were not derived, and yet the modern animals not be *new creations*. He tells us,

“I do not pretend that a new creation was required for calling our present races of animals into existence. I only urge that they did not anciently occupy the same places, and that they must have come from some other part of the globe.” (126)

This Theory is fated to be its own executioner on every occasion! Modern animals then are not a new creation. They came “from some other part of the globe.” Nothing but the desperate case of this Geology could have forced its author into this admission. He saw its destruction inevitable if he admitted

new creations. For then he arrives immediately at the hand of God. But the moment we bring Geology into contact with the Most High, that moment it crumbles into dust. For *one* interference of the hand of the Almighty at the *Deluge*, and that not a thousandth part so extraordinary as *many* of their revolutions require, would set the whole state of the earth to rights, and put every thing into its place. This subject must, however, be further attended to hereafter. Our business at present is with M. Cuvier's declaration, "*our present races—did not occupy the same places—They came from some other part of the globe*"!!

This, as we have frequently had occasion to remark, is utterly destructive of the author's "Theory." If no "new creation was required for calling our present "races of animals *into existence*", it must be because they *existed* before, or were derived from, what M. Cuvier calls, the *ancient* animals. But if they *existed* before, they are not *modern* animals, but *ancient* ones. Yea, and as ancient too as any animals which M. Cuvier finds in the "rocky strata." For if they are not as old as his *extinct* races, and yet were not derived from them, they must have been a "NEW "creation", if they were created at all. For there is no other way possible. Either they are *as old* as the *extinct* races, or they are derived from, or created *since* the extinct ones were created. And let them have been created when they will, it must have been *then* a "new creation."

But as they are not "a new creation" they are an *original* generation. Their *origin* is as truly ancient

as any others. And though they might not “occupy “the same place”, but “came from some other part “of the globe”, they occupied that “*other part of the “globe”*” at the same time as the “*extinct genera and “species”*” occupied *this*.

The inference then is inevitable. There is no such thing as “*ancient and modern*”, as it respects the different races of animals. It comes out at last that “ancient and modern” are not distinctions of *time*, but of *place*! Then all our successive generations of animals are lost and gone. They are become *synchronous*, and of the *same era*.—Nay, as these terms, ancient and modern, are now found to designate the *places* of these respective animals, and not their succession as to time, they may be fairly made to invert their *order* and change their character: The ancient may become modern, and the modern ancient.

For instance. When the mammoth lived in Siberia, the modern elephant might occupy Bengal. And when the *extinct* hyæna dragged the elephant’s bones into Kirkdale cave, the *Cape* hyæna might then live where it now does. And if these elephants and hyænas were then the *only* occupants of those southern regions, any Geologist there, on finding bones of those animals only, would call them *ancient* and *modern* too. But if he found others like our animals, in the strata in the south of Africa, of which there are none now remaining, he might, if their present animals had migrated thither, since those, similar to our own animals, became imbedded in the strata, call our *present races* ancient, and those which M. Cuvier calls *ancient*, he would call *modern*!!

But we have all along seen that M. Cuvier has built his "Theory of the earth", not in part, but wholly on the assurance of SUCCESSIVE *races of animals*, AS TO TIME. It is, however, now certain, that all this is turned into a perfect dream, by the consideration that the "present races" are not "a new creation", but come from some other part of the globe. How can successive eras be proved by animals which are synchronous and of the same age? Where there is a collateral existence, there neither is nor can be a *succession*.

To say here that such is the order of the strata as it is found around Paris, is even ludicrous. For the reverse might possibly be proved in Africa, in China, or in New Holland, or even in England. Nay, M. Cuvier himself literally supposes that it might possibly be *reversed* in New South Wales. Then, surely, this author does not expect that *facts* should be received as evidence of his "Theory of the *earth*", which, in *another* part of the globe, would be inverted and turned upside down. Surely he does not expect to prove the extinct genera to be many ages *older* than the present races, by a process which, if adopted in another part of the earth, would prove them to be many ages *younger*!!!—The "Theory" then is inconsistent and absurd. It destroys itself, and neither does nor can exist, or hold together. It is a mere fancy—A Geological conceit, or a theoretical whim.

PHYSICAL STATE OF THE GLOBE.

BOOK III.

CHAPTER I.

DEPOSITION IN A FLUID. HORIZONTAL FORMATION AND CONSEQUENT REVOLUTIONS.

SOME readers perhaps may be ready to say that our preceding discussion has indeed proved that the modern Geological Theory has no *proof* of its correctness ; but that this alone does not prove that it may not possibly be true ; or may not be capable of proof by some other evidence which may by possibility be hereafter adduced. To this I would say, that the preceding chapter respecting *new creations*, makes the subject nearly *morally* impossible. In this and the succeeding chapter we have to prove that the existence of such a Theory is *physically* impossible.

I. DEPOSITION IN A FLUID.

It is a fundamental principle in this modern Theory that the whole globe, and every part of it, was deposited

in a fluid, and that fluid the sea. In our discussion respecting the secondary or fossil strata, it was specified that the "fossil strata" alone, led our Geologists to infer that the "Primitive strata" were also "formed in a fluid." But having once admitted the impression into their minds, that they were so formed, they boldly declare that the very *appearance* of the mountains proves *how* they originated. That there is a fallacy somewhere in their views upon this subject, a little reflection would lead us to see. For it is inconsistent with the position of M. Cuvier, that "it is only by means of "analogy, that we have been enabled to extend to the "primitive formations, the same conclusions which "are furnished directly for the secondary formations by "the extraneous fossils;" but for these, "it could "never have been asserted that these several formations had not been simultaneous." (55.)

Then *analogy alone*, forms the conclusion. The "nature of the strata" we see, gives no such conviction. Hence it is not true, that "their crystallization, "and even the nature of their strata, shew that they "also were formed in a fluid."—What I am here particularly concerned to shew, is, the physical impossibility of the strata being deposited in a fluid. When I say this, I mean that they were not deposited slowly, quietly, and gradually, as M. Cuvier supposes; or, that they were "thousands of ages" in being deposited. I can only touch upon a few points connected with this subject, and those briefly: For each of itself would serve for a treatise.

It is contrary to all we know of the nature of fluid depositions.

We might here ask, were all these strata formed *at*

once or at *successive* epochs? *At once*, they could not be formed, for that is contrary to the very supposition, and to the Theory, which asserts every formation to be of a different era from every other formation. And if at once, *old* and *new* are absurd.—If separately, we must inquire how this could possibly be. Granville Penn Esquire has quoted De Luc as saying of the strata; they were formed from a “Confused assemblage of elements of which water was the basis; and it is from this first mixture that all substances whatever, which engage our attention, or experience formed themselves.” (Viz. “*were formed*”, I suppose it means.) (p. 20.)

This indeed seems to be the view which M. Cuvier has of the subject. Every part of the globe was deposited in a fluid. That this however is most demonstrably absurd and impossible, a little consideration will convince us. If the whole earth was first suspended and then deposited in water, what must have been the process? It is impossible, as we have observed, that it could be deposited at *once*, for that would make all the strata *simultaneous*, and is perfectly destructive of the Theory. Every formation then has been deposited in succession and alone. Mr. Necher de Saussure to whom we before referred, speaks rightly on this point. He says,

“If we abandon the fundamental axiom of Geology, that two rocks which differ in their nature and stratification, belong to periods of different formations, it is easy to see that the basis on which the science itself reposes is destroyed, and that the edifice must fall to ruins, without the possibility of ever building

“it again upon a solid foundation.”^s Jour. of Sci. No. 25, p. 189.

Did the sea then we ask, when it deposited in the first instance, the *Granite* rocks, hold at the same time, *all the rest* in suspension?—Then so it did in the following strata, to the last in succession.—This, however, is monstrous. There are four primitive rocks,—nine transition—and in France twelve flætz, and in England seventeen, as Geologists state them.—Some of these, as the Paris formation, consist of two, three, and four formations, and ten or twelve beds or layers.—Thus then, we should have,—Primitive rocks, four formations,=forty combinations.—Transition rocks, nine formations,=twelve combinations.—Flætz, or flat rocks, seventeen formations,=fifty combinations. Thus we shall find in this extraordinary mass of matter in a fluid, not less than thirty formations, including at least one hundred combinations.—And this, besides *subordinate formations, alternations and intermixtures, endless*.—If we examine this deposition, its folly will

^s As Mr. Necher, who makes the above declaration, is himself opposed, in several particulars, to the Wernerians, we learn from the above quotation, that whether modern Geologists be Wernerians or Antiwernerians, their *systems* are fundamentally *the same*. It is essential, we see, to *this* author's system, as well as to that of M. Cuvier, that—“*rocks which differ in their nature and stratification, belong to periods of different formation.*”—The *difference* between these several authors does not appear to be in the things themselves, but in the *mode* and *agency* concerned in their formation. The *one* supposes that the strata were dissolved by *water*; the other, by *fire*; and some of them suppose, that both, in different cases, were employed.—But they all hold that the strata were first *deposited* and *consolidated* (greatly) in *water*, and *subsequently elevated* into their present state. This being the case, we shall see that numerous *formations* require numerous *revolutions*, and both will necessarily be involved in the same discussion.

appear. For, what must needs take place in every successive operation ?

The *primitive rocks* are composed of,

1. *Granite* ; which consists of felspar, quartz, and mica, and combines at last with four others.

2. *Gneiss* : composed of the same, and seven more.

3. *Mica slate* : of quartz and mica, with ten combinations.

4. *Clay-slate* : of mica and felspar with ten to fifteen combinations.

Now we see from this that the *two* lower primitive rocks consist of the very same *ingredients*, (in different proportions it is true) though the granite is a *crystallized* rock, and the gneiss *slaty*.—The two upper ones, or rather, outer ones, though one is “slaty and stratified”, and the other a “simple rock”, contain each of them *two* of the same ingredients as the two former ;—the one quartz and mica, and the other mica and felspar.—*Mica*, then, enters into the composition of *all* the primitive rocks : and *quartz* and *felspar* into *three* each, out of four.—These original and chief substances, alternate or combine in different and successive orders with porphyry, syenite, hornblende, trap, serpentine, limestone, clay, and five or six kinds of slate, forming at least, in the primitive rocks, forty combinations.—These four primitive rocks contain no bones nor shells ; and are therefore considered to have been formed *before* animals existed. But the “*fused assemblage of elements*” was, according to the Theory, suspended originally in the water ; and from this “assemblage” these four rocks were deposited.

Can this, however, be conceived ; or is the process,

on any principles of nature, possible? For either all these ingredients were suspended in the original fluid, or the fluid must have obtained a fresh supply, after each deposition. Neither of which is possible upon natural principles. For if this were the *original* assemblage, it must have been *so created*, or it never was created. And every fresh supply, if fresh supplies it had, must have been derived from the same source; viz. new creations. If the whole mass was assembled at one time, the depositions must have been made at one time. For no person in his senses can believe, that this confused mass deposited the granite by itself alone, while all the other ingredients were suspended (and that for thousands of ages probably) in the same identical fluid!

In such case, *mica* must have *divided* from mica, and *felspar* from felspar, and *quartz* from quartz, and associated themselves with mica, quartz, and felspar. These must have formed, as our authors suppose, the great *mass* of our globe, while all these other ingredients were still suspended, for indefinite ages longer. Indeed, we cannot calculate the time. But M. Cuvier supposes it certain, that the secondary rocks were "thousands of ages" in forming. If it be true that a mile or two of depth in the secondary strata took up thousands of ages, what must four thousands of miles have required in the primitive!!

But these different elements are themselves *compounds*; and each consists of three, four, and five elements. The mica, quartz, and felspar, two and a half times the *specific gravity* of water. They contain also precious stones, as *sapphires* and *rubies*, which are

three or *four* times the weight of water ; besides *metals*, sometimes formed in amazing quantities not only in *veins*, but through the mass of rock itself. These metals of gold, silver, copper, tin, iron, lead, &c. are some of them *ten* or *twenty* times the gravity of the fluid in which they must have been suspended for ages and generations. †

But at what a mass of folly have we now arrived, in this “confused assemblage ?” We have a globe of earth eight thousand miles diameter, first suspended, and then deposited in this fluid, the *sea*. Now allowing the *sea* to be a quarter of a *mile* deep on an average, it would but give, according to Buffon, about thirty two *millions* of cubic miles. But the *solid contents* of the *earth* amount to more than two hundred and fifty *thousand millions* of solid miles.—A mass of matter this, from two to twenty times their *specific gravity*, and between seven and eight *thousand times* the *bulk* of the *waters* which held this mass in suspension ; viz. about *twenty thousand* times their *own weight* !!!

† I cannot enter into the dispute between the *igneous* and *agneous* systems of Geologists. But it is curious to see them contending, the one, that *water* could not dissolve these respective elements, and the other, that *fire* could not. Nor shall I here resort to Dr. Mac Culloch’s essay on “*mineral veins*”, to inquire how many can be dissolved by *water*, and how many by *fire*. But I shall make two remarks on the circumstances of this *dispute*.

1. We ought, if we would judge impartially in this case, to admit that these *opposing* Theories, coming as they do, from men both learned and practically acquainted with their science, *neutralize* each other ; and like two bodies striking a third, in opposite directions produce *no* effect upon *it*, but destroy *each other’s* influence !—What, then, are we to say of the multitude of persons who greedily swallow M. Cuvier’s dogmas as if not a syllable of reason could ever be advanced against them !!

2. As both Theories oppose the literal meaning of the *scriptures*, we may expect to find them both overthrown by the same general arguments, though every argument may not apply with equal force to each Theory.

Or if to avoid such monstrous consequences, we suppose the waters in the *atmosphere* to have united, and that waters are situated in the *bowels of the earth* to the extent of a globe four or five thousand miles diameter, or if you please, to the extent of *half* the bulk of the globe; the supposition would literally be most useless to the purposes of this system. This indeed would allow an equal bulk of *earth* and *water*. But it would be perfect insanity to talk of water holding *in suspension* its own bulk of matter, so many times its own weight!—Or were we to stretch our imagination to the supposition that our globe consists of ninety nine parts of *water* to one of *earth*; this extravagant admission would not afford us the least idea of a *rational cause* for the earth's being deposited in a fluid.—But *here* we clash with established *science*, and contravene the decision—‘that the mean *density* of the earth is greater than that of *water*.’—Therefore, our extravagant position is *philosophically* absurd.

I need not pursue this reasoning, through the *nine* transition rocks, and the *twelve* or *twenty* flætz. But the further we proceed, and the more complex the earthy deposits become, the more puzzled we shall be to account for their separation and deposition. It is quite evident that no part of our sea could, at once, hold in suspension a one hundredth part of *two miles* deep of calcareous rock, which is the depth at which Mr. Buckland estimates the secondary strata. And how were the precious *stones* and *metals* selected, brought together, and deposited where they are, in fissures or veins, apparently formed, many of them at least, since the rock itself was formed? No Theory of *Werner* or of *Hutton*

can give any account of all this. The whole is contrary to every thing we know of *metallic solvents*, and *watery depositions*!!

II. HORIZONTAL FORMATIONS.

It is essential to the 'Theory of deposition in a fluid', that the deposits be formed *horizontally*. All known deposits which are formed in a fluid, are horizontal. M. Cuvier considers this indisputable; And therefore, instead of proving the point, he takes it for granted; and says, with respect to strata not now horizontal, "as they must necessarily have been formed in a horizontal position, they have been subsequently shifted into their inclined or vertical position, and that too before the horizontal strata were placed above them." (10, 11.)

He also writes respecting the *superposition* of the strata, as proving their *successive* and *subsequent* formation. He says, "When we dig through the horizontal strata in the neighbourhood of the inclined, the inclined strata are invariably found below." (10)

We have before seen that M. Cuvier afterwards admits, that *superposition* proves nothing; nothing about *successive* formation; and that we could not even have suspected "*successive*" epochs of formation, had it not been for the "*fossil strata*."—Having, however, likewise seen that the "*fossil strata*" *prove* no succession, we may expect the advocates of their Theory to go back again to *superposition* and *horizontal* formation. We must however, only advert to a few of the anomalies attendant upon this extraordinary fancy.

Deposition in a fluid involves the idea of *horizontal strata*. This is an unavoidable consequence. And

horizontal deposits as necessarily involve consequent *revolutions*, to make these horizontal strata *inclined* or *vertical*, as we now find them. The utter impossibility however, of such deposits, revolutions, and locations may, I assure myself, be fully proved, as contrary to every principle of nature, with which we are acquainted. —The *horizontal* form, is the necessary result of slow and gradual deposition in a fluid.—The *revolutions* are necessary both to bring the *water on and off* the strata, and to *raise* those strata from a *plain*, to an *elevated situation*.

Let us examine, as a first example, the Primitive formations.

III. REVOLUTIONS AND SUPERPOSITION.

Superposition is no proof of posteriority of formation. If it be, every successive stratum, and every layer, will prove successive formation. Then as there are four primitive rocks, nine transition, and seventeen flætz, we shall have full thirty strata of different character. But we have before observed, that these thirty formations, from their different alternations and combinations, will amount to at least one hundred. These would require as many changes in the “chemical nature of the fluid”, and as many revolutions in the globe.

It is plain, with respect to the lofty mountains, that if they were deposited horizontally, they must have been raised by force, subsequent to their formation. It will be our present business to discuss this point, and to shew that this cannot be. There are four primitive rocks,—the granite, the gneiss, the mica-slate, and the clay-slate. The granite is said to be

lower in the earth than any of the others, and to reach higher in the pinnacles of the mountains. As the granite generally lies in a sloping, or inclined form, the others rest upon its skirts. Commonly they are found in very rugged and disjointed forms ; sometimes, but seldom I suspect, pretty regular, like the coatings of an onion.

1. Suppose (though I admit the possibility that it may be contrary to the "Theory" of M. Cuvier) that these four rocks were all deposited at successive epochs, indeed, but before any *revolution* or rupture had disturbed and elevated the lower strata ; it is plain that the granite would form a horizontal floor, and the gneiss would form another horizontal stratum upon it, and so of the rest.

These rocks, though distinct in arrangement, lie firmly adhering to each other. When therefore, the force operated which raised these horizontal formations into mountains, the whole mass of these strata, when elevated, would correspond with their situation before elevation. If the fracture or breach, for instance, were made at right angles with their horizontal surface, that is, perpendicularly through them all, the upper edge of the section, when elevated, would still present a plane at right angles to its surface, *now* become an inclined surface.—The situation of the *granite* then, when the whole were simultaneously raised, would still be uniformly, at the *fractured* part when *raised*, *lower* than the fractured edge of the strata which lies upon it.

For instance. If a bed formed of these four strata and fractured, or cut perpendicularly through the whole, (a mile square, suppose on the surface) were raised by

mechanical force. The *granite* which lies underneath, would continue underneath, when it was being raised. But it would be less and less so, till the whole mass became vertical. In which situation *all* the *fractured* edges of these strata, which were perpendicular to the horizon before they were disturbed, would be, when elevated ninety degrees, horizontal, and even at top. The *granite* would now appear at the upper edge, and on *one side*."

Or if we were to suppose that the whole mass were pushed further so that the granite might form an *obtuse* angle with the horizon, the granite would then indeed be the highest at top; but it would have this feature about it, which is utterly destructive both of the fact and of this Theory; it would lie on the *outside* of the mass, and would be inverted, as to its *present form*; viz. it would lie upon the skirts of the other strata, instead, as it is now found, with the other strata, lying on the skirts of the granite. So that, under this supposition they would, when raised beyond a right angle, have changed *their relative positions*.

Nor can any supposition of a *fracture* varying in its form, or *angle* with the horizon, materially alter the case. The outer coatings or strata would, when *raised*, still keep their connexion with the granite upon which

"I admit, that the above reasoning supposes the strata, on being elevated, to remain *immovably* attached to each other, but there is no reason to suppose otherwise. For, besides the singular circumstance of rocks so situated, sliding down each other, the fact, if it were so in any instance, would easily be discovered; and the present position of these rocks does not admit of such a supposition; and as a principle *generally* applicable to these rocks, it would be utterly untrue, yea, impossible; for they are frequently connected and even *locked* together.

they lie, and *when elevated*, they would lie even with the granite at top, or would be a little higher than the granite or a little lower, according to the fracture and the angle of elevation. But in no case whatever, unless we could suppose that in the act of elevation, the outer strata slipped off and slid down from the granite, would they or could they, be much lower than the granite.—But as this situation of the granite with relation to the other primitive formations which lie upon its sides, is precisely the *reverse* of fact, and indeed is directly opposed to the *Theory*, it cannot possibly be true. The *granite* is stated by M. Cuvier (though even that statement has its exceptions in point of fact) to be almost uniformly higher, yea very greatly higher, than the strata which rest on its skirts.

It is demonstrable then, that the *first* supposition, namely that all the primitive rocks were formed (though at various epochs of deposition) in succession upon one another in a horizontal position *before* the lower strata were disturbed, and that then, when they were all *so deposited*, were raised by force *simultaneously and at once*, is absolutely erroneous and untrue. On every mechanical principle the supposition is quite impossible.

2. These strata then must have been not only *formed* separately and *alone*, but *elevated* separately, and before the successive strata were deposited upon them.—We will now inquire into the result of this hypothesis.

The *granite* rocks we must now contend were deposited horizontally, and elevated or projected, by some cause or other, into somewhat of their present position, and this while *those rocks were alone*.

The *gneiss* rocks, then, we must admit, were

formed in the same horizontal manner. For these rocks being also deposited by slow and very gradual deposition "must of necessity be formed horizontally." This is the essence of the Theory. But now observe the gneiss is *found horizontally*, and cannot therefore be deposited in an *inclined* position upon the *oblique sides* of the high towering-granite rocks, but horizontally upon the *plain, at their base*. What now (we may ask,) what mechanical power, influence, or effective force, elastic, volcanic, or otherwise, is there to be named, which could remove this horizontal floor of gneiss and place it like the slating of a house upon the oblique skirts of the granite rocks !! There is no such thing.

Besides, *violence* operating from beneath could not be expected to raise the *gneiss* and yet suffer the *granite* in its neighbourhood to remain quietly where it was, while it put the gneiss regularly upon its sides. The *force* whatever it was, while it elevated the horizontal floor of gneiss, would also overthrow the inclined walls of the granite. The fragments of these respective formations would doubtless take different and uncertain directions. But, in reasoning from every known operation of nature, it is very evident that whatever violence overturned the earth, part of which viz. the gneiss we now suppose is a plain, and another part the granite is a *mountain* resting upon that plain, or by the side of it, would much more frequently throw down the mountain upon the plain, than raise the plain upon the mountain. Much less could it be supposed that violence would raise, and quietly let fall the floor of gneiss upon the lower skirts of the granite, and no

where else. This process indeed upon every mechanical principal is utterly impossible, and therefore inadmissible.

This however, is not all. There are *two* formations more, the mica slate, and the clay slate, which this system would make necessary, to obtain first a *horizontal deposition*, and subsequent, and almost vertical *re-position*, upon the oblique sides of the gneiss. And two processes like the former, only rendered more complex from the number of the strata, are to be executed, in order to place these two outer coatings upon the skirts and inclinations of the gneiss.

Again. Whether the granite mountains which are in nearly all forms, take a longitudinal direction, and form immense ridges, or are round and pyramidal, it is still the same. The form of the mountain does not change the location of the primitive strata. If the hills are long, the gneiss &c. cover the skirts of the granite; if they are round, they do the same. It is clear therefore, that nothing could effect this amazingly complex operation; but something which as regularly *designed*, and as correctly executed that design, as an *architect* could design and execute the erecting and covering of Saint Paul's Dome.

It is perfectly certain therefore, that these primitive mountains could not be, and were not first deposited in a fluid, in a *horizontal* position, and then subsequently *elevated* by mechanical violence. They ~~could~~ were, nor could be so deposited, and so raised, either *together* or *alone*. The supposition in its operations involves as great a physical absurdity as can easily be conceived.—But

3. On this hypothesis of *horizontal* deposition, the granite, the gneiss, the mica slate, and the clay slate, must, at a distance from these mountains, have fields of *horizontal* strata lying upon each other. For that *only* being raised from a *horizontal* position, which is now a *mountain*, all the rest of the formation must still remain *horizontal*. Thus we should, by digging through the superincumbent strata, find *horizontal* strata of *slate*, of *gneiss*, and of *granite*, as even as a plaster floor, and as extensive as the *sea* in which they were deposited !!

We should thus, however, find that *inclined* and *vertical*, are only terms invented to describe mere *accidental* circumstances which have befallen certain portions of the strata since they were first deposited ; and that the *horizontal* character of the strata does in fact belong to all the earth. And this reasoning will apply according to this Theory, to *all* the formations, whether *primitive*, *transitionary*, *flatz*, or *alluvial*.

OBJECTION.

If to avoid this fatal alternative, it should be said that the above reasoning does not apply to the more *ancient formations* ; For we need not suppose that *more* was *originally* deposited than was *subsequently* elevated ; and that in fact, the “entire crust” of the primitive formations has been overturned, and raised up into rocks and mountains.—This view of the case can never be supported. For the *primitive sea* (as it was admitted by the very Theory itself) being without *mountains*, *rocks*, or *divisions* of any sort, must have been an *uniform mixture*, or nearly so at least ; and not only uniform, but *universal*.—The whole globe

must therefore have been deposited in *one solid compact stone of granite*; surrounded by the aqueous medium in which it was deposited.—But here we are surrounded with a host of miracles.

1. This surrounding *water*, to have any approximation to a quantity sufficient to suspend four thousand miles deposit of granite rock, must have been many thousand miles deep, and we need a miracle to get rid of it.

2. The granite depositions, agreeably to our previous remarks on depositions in a fluid, contradict every thing we know of the laws of *chemistry*.

3. This granite mass being solid, and nearly or wholly homogeneous, exhibits no mechanical means by which it can be broken up. Therefore every thing we assume relative to *such breach*, implies a miraculous operation to elevate it into mountains.

4. Having however *imagined* the waters to be dissipated, and having also imagined the granite globe to be broken up and formed into mountains, we need several miracles more;—*one* to supply and restore the departed waters;—*another* to charge them with fresh materials for the next deposit; viz. of gneiss upon the granite;—and a *third* to prevent this restored abyss, (which, for reasons as above, must at least have been much *higher* than the highest mountains) from depositing its gneiss all over the *tops* of the granite rocks, as well as in a horizontal form at the *base only*.

Nor can we avoid the difficulty by saying that a *shallow* depth of water might, in a *sufficient* number of years, be able to deposit first the granite, and subsequently the gneiss, then the mica-slate, and ultimately,

the clay-slate. For here it is forgotten that water can deposit no more than it holds in suspension, if it rest ever so long in its place. The fact is, that a real and positive *creation* of matter would be necessary, or something tantamount to it, to supply the water with a successive charge as it deposited its previous contents. *Creation* then, and constant *miracles* are forced upon us in spite of ourselves, and do what we will, we can never get rid of them.

In every way therefore, in which we can view this extraordinary Theory, of successive depositions and subsequent revolutions, it becomes the more extraordinary the further we pursue it. It is a compound of inconsistency and impracticability. We may boldly defy the collective wisdom of Geology to explain these successive charges, deposits, and revolutions; and to make them at all consist with the operations of nature, or with the dictates of common sense.

CHAPTER II.

FORMATIONS AND REVOLUTIONS IN BASINS IMPRACTICABLE.

REVOLUTIONS in the *primitive* rocks we have seen to be gratuitous and impossible, consistently with the Theory which gives birth to those revolutions. In the *secondary* strata, however, such revolutions as would answer the purposes of the Theory are, if possible, more distant still from all practicable possibility. We have only to inquire into the *nature* of a revolution to see immediately the truth of this position. What is a *revolution*? What does it *imply*? In *nine* transition rocks, and *twelve* or *fifteen* flætz, we shall have more than TWENTY REVOLUTIONS among the secondary strata. I use *secondary*, here, as only excluding the *primary* stratifications. Each of these revolutions *includes* an interchange of sea and land; or in other words, that the sea and land changed places. The sensible reader will easily perceive that our arguments

relative to the primitive rocks will apply with perfect demonstration, to a large majority of the revolutions in the secondary strata. For the sake of brevity, therefore, I must leave him to his own reflections upon them, and omit a quantity of *manuscript* which I had prepared for this subject, and hasten to notice the formations and revolutions in *basins*, on which the present discussion greatly hinges.

From the "Paris basin," the "Isle of Wight basin," and the "London basin," great evidence is derived, by our Geologists, in illustration and confirmation of this modern "Theory of the earth." M. Cuvier supposes that there "have been an alternate flux and efflux of "salt and fresh water over the country around Paris, "and from which these rocks have been deposited." (362.) In the Isle of Wight basin, from half a dozen to half a score "salt and fresh-water" formations are found in succession. Revolutions, therefore, and formations of an extraordinary character there must needs have been in these basins, provided this Theory be correct.—*Basins* are so called because they are supposed, by Geologists, to bear something of the *form* of a basin, being *elevated* towards their exterior edges or rims, and *depressed* in the centre, into a hollow, or perhaps a level surface.

In England the *form* of these basins, superficially is nearly triangular. The London basin, whose extreme points are Hungerford, Cromer, and Margate, may possibly contain about ten thousand or twelve thousand square miles. And the Isle of Wight basin, reaching from Blandford through the centre of the Isle of Wight to Brighton, and thence to Salisbury, may con-

tain one thousand or fifteen hundred square miles.—The HEIGHT of the chalk on the lofty edges of these basins varies perhaps from five hundred to one thousand feet above the sea. The chalk hills near Dunstable are nine hundred and ninety four feet above the level of the sea. And in the Isle of Sheppy the chalk is stated to reach at least two hundred feet *below* the deepest part of the neighbouring sea.—But these chalk basins must have been much deeper than this. For Mr. Buckland represents them to contain within themselves *depositions* which, together amount to *two thousand nine hundred and forty two feet*, independently of the mass of *alluvium* the depth of which he has not stated.

I have just mentioned these points because they are necessary to our understanding the *physical* character of these basins. But having done this, I shall proceed to the consideration of their *formation*. And here I cannot but think we shall soon see that the very supposition of such basins is fraught with the most extraordinary consequences.

I. THEIR FORMATION, UPON NATURAL PRINCIPLES, IS IMPOSSIBLE.

There are numerous reasons which instantly press upon us, in proof of this position.

1. They could not be *so deposited*.

We have seen that the *elevations* of these chalk basins, in order to contain the above mentioned portion of deposit, amounting to nearly *three thousand feet*, must *themselves* have been far deeper than three thousand feet. But I assume at present that their *variation* may not be greater than from two to three thousand

feet. The *hollow* then, of these basins, we will suppose was three thousand feet deep.—Now it is plain they could not be thus deposited. For

They must either have been deposited on an *even* or an *uneven* surface, or bottom. Because their nature *as basins* is very greatly *uneven*.

Had the chalk been deposited on an *uneven* surface, the lower or under side of its *bottom* would have been *uneven*, like the surface upon which it was deposited; but the *upper side* of the chalk, from the very nature of all *horizontal* formations, would have been *level* on the surface. Instead then of obtaining a *basin* by this process, we should have a mass of *chalk*, like the mass in a fishpond; the *water* of which was *all* frozen into ice. It would retain the form of the fishpond at bottom, but the *surface* would be *flat* and *even*.

If the chalk were deposited on an *even* and level bottom or surface, it would then be flat and even at both *top* and *bottom*, and of *uniform* thickness throughout. None of these things, however, are found in the chalk strata. Therefore they were not and could not be DEPOSITED in the *form* which, *as basins*, they now sustain.

2. They could not have been *washed* hollow by water.

This appears evident; For the very nature of a *basin* implies that it is already hollow. And M. Cuvier, as before quoted, certainly supposes the basins *themselves* to have received their form from “*islands and projecting ridges*” in the sea. But as the *chalk* deposit must have been *horizontal*, and even at *top* the very nature of a basin is gone. It is a flat table,

and water would have no tendency by running over it to scoop and hollow it out into a basin. Any water rushing over it might tear it up and carry it away in a mass, but would not form it into a basin.

But even this supposition could not be. For the *chalk* being of its own nature a *basin*, the water it contained would be confined to the basin, and could have no room for currents, eddies, or whirlpools. And as there could be no *tides* nor any communication from without, no motion of the water could possibly make this plain surface hollow, unless a vacillating or circular motion. Yet here again, as the *basin* is all chalk, the supposition of its being *washed* into a basin is absurd. For if water washed the chalk *up*, it must *deposit* it again, and could not carry it away. The very notion therefore of a mass of horizontal strata, being formed into a basin *subsequent* to deposition is ridiculous, as well as contrary to the very *nature* of a basin, which is by the Theory itself supposed to be a basin from the beginning. Moreover, their irregular form and projecting pinnacles forbid our supposing that *water* formed them thus by washing up the chalk.

3. They could not be *violently* raised into a *basin* from a horizontal position.

The outsides or rims of the basins, only or principally are raised. But violent convulsions do not make such elections, unless *volcanic* irruptions indeed; which however, are never supposed to have been the cause of the form of chalk basins.—Had *violence* raised the edges of these basins from their original level, their raised parts would have been fractured and driven in all directions; and instead of raising up *walls* at the

exterior edges so as to form a basin which should preserve the exclusive possession of its own contents, the convulsion would have made ruptures in the sides or edges of the basin, and rendered its contents common to the ocean at large. And this is indeed the very character of these, so called, basins. They have *no* regular *rim* or elevated border *round* them. The *chalk* which should supply an elevation to the sides of these basins, is very often *wanting*, and there is no evidence that it was ever there !!

In a case so obvious it is useless to enlarge. For any person in the least acquainted with the physical operations of nature, must know that in order to cast any thing in the form or shape of a vessel or *basin* which is round (or uneven in any way) at the *outside* and *hollow* within, there must not only be a *mould* for the outside, but also a *core* or mould for the inside likewise.—And to suppose them to be deposited horizontally, and *subsequently* formed into *basins*, destroys the very *supposition* of a *basin* or confined vessel, and necessarily throws the whole open to the sea.

I conceive therefore, that the proof is positive and decisive, that the *formation* of such basins, if such there be, is upon every principle consistent with “*horizontal formation*” and “*deposition in a fluid*”, utterly *impossible*, and that this modern “*Theory*”, therefore, cannot *exist* in conjunction with *basins* !!

II. THE NATURE OF BASINS INCONSISTENT WITH THEIR SUPPOSED CONTENTS.

Mr. Buckland, as quoted by Mr. Phillips in his “*Outline of Geology*,” makes the following statement, to which we before alluded, relative to the con-

tents or formations inclosed in the aforesaid *chalk basins*.

	FEET DEEP.
1. Alluvium,	
2. Trap rock, - - -	1040
3. Fresh-water formation, -	122
4. Upper marine formation, -	36
5. Lower fresh water formation,	63
6. London clay, - - -	550
7. Plastic clay, - - -	1131
Total,	2942 feet.

Many things arise here quite destructive of every principle of modern Geology.

The *contents* of these basins could not possibly be *deposited* in them.

M. Cuvier and Wernerians generally, suppose the sea first to have “*held in solution*” and then to have “*deposited stony substances,*”—which stony substances constitute the rocky and other strata. And that “*every separate basin,*” when it was “divided by islands and projecting ridges” into its individual capacity, did the same. (12.)

Now if Mr. Buckland’s estimate of the largest depth of deposit which these basins contain, be correct, what must necessarily follow respecting them. If, to avoid complexity we take, for example the “*plastic clay*” which is the lowest formation found *in the basins* of which we are speaking; what will be the result.

The “*plastic clay*” is stated at eleven hundred and thirty one feet in depth. Now what must have been the *depth of WATER* necessary to hold such a mass of earth in *solution* or even *suspension*; and how long

must it have taken to have deposited such formations? If we only suppose, which is a very improbable estimate, that *ten* feet of *water* would hold in solution and then deposit *one* foot deep of stratum, the *depth of water* required to deposit this more than *one thousand* feet deep of "plastic clay," would be more than *ten thousand* feet. This result, however, would require that the *walls* of these basins should be at LEAST *ten thousand feet high*, in order to contain the ten thousand feet depth of water necessary for the above deposit!—The very supposition however, of such *basins* as these, is every way absurd. The *height* of the walls is TEN TIMES as great as the *highest* part of the walls of the "London chalk basin," above the sea!!

If to avoid the extraordinary consequences of admitting the *walls* of basins to rise *two miles above* the level of the sea, it should be said that the basins might be *hollows sunk* in the bottom of the sea; and that for aught we know the *chalk* under London and its vicinity may even be two miles deep, as no one has been able to ascertain its distance from the surface.

To this I would answer: If so, we should only have the Plastic Clay formation which rests immediately upon the chalk, at the *bottom* of this basin: and therefore it would be far enough out of our reach: a *mile and three quarters*, from the surface, at least! And on the *former* supposition, nine-tenths of the chalk *walls* must have been swept away.

Beside, if these *basins* be admitted to *sink* so deep, as is above supposed, and the *chalk* is not far above the surface of the ground, we shall have chalk basins *filled* with deposits, nearly *two miles deep*. But this

would make chalk basins which are considered only a comparatively *modern*, and not very *deep* deposit, fully equal in depth to the very greatest extent at which Mr. Buckland estimates the whole of the secondary formations; which estimate, moreover, is made upon inadequate information, as to the actual situation of the strata, and is probably overrated.—But the very notion of *sunk* basins is perfectly absurd. For in *that* case they would be nothing but hollows in the bottom of the *sea*, and therefore common and open to the sea at large, and to all it could carry into them, which is totally destructive of the very *nature* of basins, and to that which is supposed to be their essential character; viz. that they are *exclusive and peculiar*.

But a most destructive feature of these deposits is, **THEIR MATERIALS.** Here we suppose that we contemplate clean *chalk* basins containing seawater not less than two miles deep. Where now is this water to obtain its impregnation of *eleven hundred and thirty-one* feet deep of “plastic clay,” or of “coarse shell limestone”, which have been deposited upon these chalk bottoms? The “plastic clay” consists of *gravel, sand, and rocks*. Where did the water of these basins obtain these deposits? From the *chalk* it could not be derived. And *sea water*, as such, is not one tenth part sand, clay, or gravel!—Again, we have *five hundred and fifty* feet depth of “London clay”; whence this!—Then between *two and three hundred* feet deep of “Fresh-water” and “marine” formations; from what are these obtained?—*Three thousand* feet depth of deposit, supposing one tenth part of the water were deposit, would require chalk

walls thirty thousand feet, or nearly *six miles* high, to contain the depth of water in these basins!!!— Besides, the absurdity of supposing, as we must (on any *other* supposition) that the waters of these basins, small and confined, or (as the Isle of Wight) not bigger than a county, deposited “sand,” in one place, “gravel and pebbles” in another, and “clay” of numerous kinds, in other places; which is utterly destructive of all the “laws of chemistry” and of “deposition in a fluid.”—These *materials* could only be obtained by *fresh creations*, and deposited by *miracle!*

2. The *arrangement* of the strata is perfectly inconsistent with the nature of basins, and with this Theory generally.

The reader must remember that the very nature of a basin implies that it is separated and “divided” from other parts of the sea by “ridges”; so that its deposits both of strata and animals, become peculiar. “The *substances*” which the sea “*held in solution,*” became changed, in “every separate basin; as well as the animals corresponding with the “chemical changes in the fluid.”—It is clear then, that the water in these basins was *confined* to the basins, and *peculiar* to them, and likewise the substances which that water held in solution, and subsequently deposited.

We have before observed that there could be no tides (of any sensible character,) no currents, no communication from *without*, in the operations of these basins. They were but like inland salt-water lakes in magnitude. We need not in this case stand upon exactness, but it is manifest that the Isle of Wight basin could not be greater than a lake forty miles

square. The London basin is, perhaps, three or four times as big as that of the Isle of Wight. Now it is not only the very essence of this system, but of the deposits of these basins, if they have any character of the system in them, that the *deposits* be made *horizontally*; and therefore, when the water deposits its contents quietly and upon an even surface, the strata deposited will extend all *over the basin alike*, and be of uniform thickness throughout.—This branch of our subject alone, would occupy volumes, to illustrate it from the different situation of the general strata, their diversity and variableness, notwithstanding the correct order in which they are arranged in systems of Geology, are so great. But I shall confine my present observations to the *chalk basins*. But even here I may well be brief.

FIRST. The THICKNESS of the strata.

Mr. Jameson speaks of the chalk strata as varying in “thickness from a few inches to several feet.” (429) If the chalk be in some places only a “few inches” thick, we know that in other situations all the beds of chalk amount to many hundred feet thick. Mr. Buckland in his table on the “order of superposition of “strata”, states the “*upper chalk*” to be, on Salisbury Plain, and the downs of Sussex, three hundred and twenty feet;—The “*lower chalk*”, at Dover, &c. to be three hundred and sixty;—and the “chalk marl” in Kent, to be two hundred feet thick; making a deposit in the chalk formation, of *eight hundred and eighty feet*.—^v

^v “Eight hundred and eighty feet thick.” The attentive reader will probably be struck with astonishment to find that the extreme thickness of the

The same remark applies to the strata *contained* in the chalk basins. The "London clay" is stated by Mr. Buckland to be *five hundred and fifty feet* thick, in a certain situation in Kent. But in other places, it does not occupy *a foot*. The "plastic clay", as it is called, seems to vary from a mere trifle to *eleven hundred feet* in thickness.

SECONDLY. The IRREGULARITY and displacement of the strata.

In basins which have deposited certain strata, and whose depositions, being confined within a small circumference, must needs have been deposited quietly and horizontally, it is not only a probable but necessary expectation, that these said strata be found in *regular order*; that is, that the "*plastic clay*" for instance, which is the lowest deposit in the chalk basins, should be regularly disposed *all over* the chalk upon which it rests; and that the "*London clay*" should be as regularly found *every where* covering the plastic clay, as the next in order; and that the "*marine*" and "*fresh-water*" formations should also flow from one side of the basin to the other, over the stratum upon which they are alleged to rest.

beds in *one* and the same (chalk) formation, should be fetched from *three* different places; and two of these Dover and Salisbury, more than *a hundred* miles apart. But this arises from the fatal character of Geology. No part of it is found to correspond, to any extent, with the pretensions of the Theory. It is the fertile imagination of geologists, and not the regular order and nature of the strata, which has made these distant formations *one*. The reader will perhaps feel more surprise when he learns that the "*flætz trap*" rocks, which Mr. Buckland places above the "*upper fresh-water formations*," and which *ought* therefore to be found above all the formations in the chalk basins in the *South of England* and in the *Isle of Wight*, are actually situated in *Gloucestershire, Durham, Scotland, and Ireland!!!*

Or, if it should be supposed that we ought not to be so precise as to expect to find the whole of each of these beds literally spreading over the whole basin like ice over a pond, or cream over a pan of milk ; I will still say that *every* stratum which this system makes necessary to have been deposited in a certain basin, ought now to be found there ; and found too in its own proper place between the other strata. And not only ought we to find *each* stratum in *some* particular part or parts of the basin, but all over the basin *generally*. And where it does not occur, its absence ought to be accounted for.

If we do not find the strata thus, or essentially thus deposited, we assert a gratuity, and say these strata were formed in this basin, while we have no evidence from *fact* of any such thing. If mud or fine sediment settle in a basin, the deposit becomes both *horizontal* and *universal*. That is, the whole *area* of the basin is filled with it. This is also the very essence of this system ; “deposition in a fluid” and “horizontal formation”, are the very life of M. Cuvier’s Theory. It is perfectly certain, that if the strata in these basins were not *originally* deposited all over the basins, and in their regular order, the Theory itself is a perfect nullity.—The two questions then which will instantly settle this point, are these.

1. Are these deposits *now*, thus situated ?
2. If not, have they been removed and dislodged *since* their formation ?

One of these must be true, or the system is false, and every edifice built upon it must fall to the ground. Now with regard to the first position, or question ; viz.

Are the strata now thus situated? I can only answer, No! nor any thing like it: nor any way approaching to it. So far otherwise I cannot find any thing whatever, except what is called the "*under lying*," or the *dipping* of the edge of one stratum under that of an upper one, which should lead any person, not biassed by his Theory, to suppose that these deposits or strata, were ever made in these basins at all; or indeed that the *basins* themselves were ever regularly deposited, as basins, or indeed that there is any such thing.

Even the *chalk* formation itself affords a very remarkable instance in proof that it never was deposited in a fluid. It consists, as we have seen of *three beds*, but which are one formation. "That all the beds are of one formation has been ascertained by their containing nearly, if not quite, the same organic remains." But though these three beds are only "*one formation*", Mr. Phillips says;—"In no one place, that I am aware of, has the whole series been seen." "In most places the chalk marl is wanting; in many, the grey chalk; in some the upper chalk." (41.)

It is utterly impossible that these strata of chalk can have been formed by deposition in a fluid,—can be *one formation*,—and yet the *three beds* be never found together; and above all, when it is recollected that the *bottom bed* is the bed which "*in most places*" is "*wanting*." "The *upper chalk* is so nearly universal, that where it is wanting, it is commonly considered to have been destroyed, or carried away by some of the numerous convulsions to which the earth has been subjected." (42.)

Though under the circumstances of the chalk it would be easy to shew that, according to their system, even the *upper* bed of chalk could never have been extensively carried away ; it is perfectly out of question with respect to the *lower* one. To speak of *three* beds as constituting but *one formation*, and yet the lowest bed to be *wanting*, is positive nonsense. For, if it were any where deposited in the basin originally, it must, as is plain from the nature of the Theory and the character of fluid depositions, have been deposited *every where*. But it *is* found in some places. Therefore it certainly was originally, *every where*—And it cannot have been destroyed or carried away BEFORE the *second* bed of chalk was deposited upon it. For then the different beds could not be *one* deposit. Nay so far from it, a most destructive catastrophe, a violent revolution must have intervened between the bottom bed and the middle one ; in order to carry the lowest bed away.

It is still less possible for it to have been removed *since* the two upper beds have been resting upon it. For in that case, the upper beds would have been carried away with the *lowermost* ; which they are not.—Nothing therefore, can be more truly demonstrable than the position we set out with ;

That the *arrangement* of the strata is utterly inconsistent with the *nature of basins* and with this Theory in general.

I had intended to remark how each of the formations—the *plastic clay*, the London clay, and the fresh-water formations, though contained in the chalk basins, are seldom or never, all found super-imposed upon one another. But this again is exactly like the chalk de-

posits, as to the essential purposes of this Theory, perfectly ruinous— But truly it would be endless, and indeed useless to multiply all the instances available to the absolute destruction of this popular Geological system.

Every one of these formations comes to the *surface* on various occasions, and forms *hills* of considerable elevation, while in other places they are wholly wanting. The London clay, for instance, at Highgate hill, at Billericay, and at Waltham Abbey, rises to the respective heights of four hundred and forty—six hundred and twenty—and seven hundred and fifty feet high.

And with respect to the *chalk* itself, it is the same. It is partial beyond all bounds for the basis of a Theory. In some places it rises in *hills* near one thousand feet above the sea ; in others it forms the elevated flat *downs* for scores of miles together ; while in many places there is scarcely any, and it “ is not known in Scotland.” (Phillips, 22. Cuv. 448.) And, what perhaps is the most fatal of all facts to this Theory, the CHALK which denominates these *basins* (because it is supposed to form large *hollows* which contain the London clay, plastic clay, &c.) in the triangle formed by “ Dover, Alton, and Beachy head”, lies ABOVE *these formations*, and is in its turn *contained by them*. —Thus the *order* is inverted, and the *Theory* destroyed !!

Where the lower strata in any instance rise to the surface, *there* the upper one can have no place. And this is so much the case, that none of the strata, peculiarly designated “ *fresh-water* and *marine* formations”, are any where found but in a few particular situations.

SALT AND FRESH-WATER FORMATIONS.

In these chalk basins there are discovered, or supposed to be discovered, successive formations of salt and fresh-water. There are various of these extraordinary combinations of strata, which are particularly prominent in the descriptions of Geology: The Paris basin, the Monte Bolca, Headen Hill in the Isle of Wight, at Brentford, the Isles of Purbeck, Sheppey, &c. These singular fossil formations seem to contain *mixtures* of fishes and land productions; and of salt and fresh-water fishes. As, however, the admission that sea and land animals—and salt and fresh-water shells and fishes are strictly intermingled, would be the immediate destruction of the Theory which is built upon “numerous *successive*” “epochs of formation”; our modern Geologists have laboured hard to *separate* these *mixtures*, and instead of allowing them to be intermixtures of all sorts of animals, they endeavour to persuade us that they are in fact, *successive* formations of salt and fresh-water fishes, and of sea and land animals.—We must now try the validity of this invention. But as the numerous cases may be fairly decided by the discussion of *one* case, I shall select one for our present consideration.

HEADEN HILL IN THE ISLE OF WIGHT.

This hill joins Allum Bay, on the north-west coast. It is four hundred feet above the sea, and about twice the weight of the vertical cliffs of Allum Bay. I shall begin with the base, and near to the water.

1. A bed of pure white sand “*without shells.*”
2. A bed of black clay about *thirty-five* feet thick,

“with fossil shells.” (I suppose these are marine shells.)

3. “Lower fresh-water formation.” Its depth is (perhaps) *sixty-three* feet. It consists of a series of beds of clay, marl, and sand, with vegetable matter; and “at the bottom there is a mixture [“a mixture”] of marine with fresh-water shells.”

4. “Upper marine formation, *thirty-six* feet thick.” “It is known with certainty, in this country, only in “the Isle of Wight.”

5. “Upper fresh-water formation, *fifty-five* feet thick.” It is separated from the upper marine formation by a bed of sand six inches thick.” It consists of a “yellowish white marl”, inclosing masses of “limestone” used for building.

6. “A stratum of clay, *eleven* feet thick.” Shells “unknown.”

7. “A bed of yellow clay without shells.”

8. “A stratum of sandstone also without shells.”

9. “Another calcareous stratum inclosing a few fresh-water shells.”

10. “The mass of alluvial forming the summit of “the hill.” (Phillips, 18—21. Cuv. 441—8.)

Let the reader carefully impress his mind with the real situation of this Headen Hill, washed by the sea, and rising gradually through these successive formations, to the height of *four hundred* feet above the *sea*, and *two hundred* feet above the *cliff*; and about the same, I presume, above the surrounding country in the rear of this hill, and these (for there are several) Bays. And when he has done this, he will soon see how little there is of reason or propriety in supposing

that the above alleged "salt and fresh-water formations" were caused by successive deposits from salt and fresh-water.

I. The very *nature* of a *basin* is inconsistent with it.

Let it be remembered, that all the above formations, according to Geologists, lie above the *chalk*, and are deposited *in* the Isle of Wight *chalk-basin*. This, I contend, is absolutely impossible. The before mentioned *ten* strata are not only (in the language of Geologists) above the *chalk*, but also above the "Plastic clay" and the "London clay" which lie over the chalk also. But instead of the "Plastic clay" lying (now) directly *upon* the chalk, and the "London clay" *upon* the "plastic clay", they all lie side by side, edgewise, or nearly in a *vertical* position, a little inclined on the skirts of the chalk.—This being their *actual* state, the Theory supposes that the chalk, the plastic clay, and the London clay were *overthrown* by a convulsion BEFORE these said ten strata were deposited. This destroys the Theory.

If the *chalk* be overthrown, the *basin* as such is destroyed. Whether the "convulsion" which subverted these strata, rent the chalk basin in the middle, and submerged the centre of the basin only, or whether it shattered, deranged, and overthrew it irregularly and in confusion, the *effect* as to this point, is precisely the same. The basin could be no basin after its disruption and subversion. Being once broken and overturned, its character ceases. Its *office* henceforth, as a basin, must also fail. It is impossible it could retain any peculiar contents, deposit any peculiar strata, or exhibit any peculiar phenomena. The basin, which

was inclosed before its disruption, would now become *open* to the sea, and all would become common.—As, moreover, no *subsequent* event either could restore, or is supposed to have restored, the character of this basin after its overthrow, every thing depending upon, or implying the *continued* existence of this basin, is quite absurd.—The very supposition, therefore, which is included in the “Theory”, namely, that this Headen hill, containing the aforesaid ten strata, was deposited *IN the chalk basin* of the Isle of Wight, yet deposited *after* the chalk walls were broken and overturned, is an inconsistent and impossible supposition.

II. It is inconsistent with the *revolutions* which must have taken place, according to this Theory, in the formation of this hill.

The same incongruities must have occurred *every time* a change took place in the formation of these strata, from sea to fresh-water, and from fresh-water to sea deposits.—We have here a “marine formation”; then we have a “fresh-water formation”; Then another “marine formation”, and a second “fresh-water formation” over that. Subsequently there are changes and deposits to the amount of about *ten* different strata, all situated one *above* another to the height of four hundred feet above the sea.

1. If now we suppose the first, or *lowest* “marine formation” to have been deposited in the chalk basin by the sea, and by the sea only, it is certain that the *basin* must have been disrupted and destroyed by the convulsion which removed the *sea* from off this marine deposit; for the *sea* could not escape from off it without disruption.—But again. When the *walls* were broken

down for the sea to depart, the deposit must have been elevated above the level of the sea, or it would have returned again upon it. Indeed, it is represented as being at one end elevated above the sea, nearly to the level of the cliff, which is two hundred feet *above* the present sea. But now again, we have no *walls* around this new elevated land. There is no pretence of any *fresh* basin being formed to inclose the “fresh-water”, while it deposited its formation above the lower marine deposit. Yet this deposit commences at a considerable height above the level of the sea, and goes on to nearly the height of the cliff; viz. *two hundred* feet. All this time, however, it is a “fresh-water lake” at this height above the sea, but without any *banks* or inclosures, though it is supposed to be peculiar and uninterrupted by the sea, and not communicating with it!!

2. Over this “lower fresh-water formation” there lies the “upper marine formation.”

This “upper *maine* formation” commences, especially at one end, at a height quite above the *cliff*, viz. *two hundred* feet above the sea, and it is *thirty-six* feet thick! Now difficulties, and absurdities, or else miracles, occur in abundance.—We have a “marine deposit *thirty-six* feet thick, “known only in the “Isle of Wight”, and is peculiar to *this* hill. It is not found on the adjoining *cliff*, nor (I believe) in the surrounding country.—It is therefore an isolated deposit raised entirely above the contiguous neighbourhood.—Yet this deposit is thus formed by the *sea*, upon this *hill*, and upon this hill *alone*.

Now, whether we suppose these deposits to have

been made before or after the *chalk* basin was submerged, Geology must stand or fall upon the consistency or inconsistency of its own properties. To stand, however, without constant *miracles* to support it, is impossible. For it is certain that the *land* must have been elevated out of the reach of the sea, during the deposition of the “*fresh-water* formation”, which is *below* this upper marine formation! How then did the sea get upon this hill, *two hundred* feet high, to make this deposit? Either the sea must have *risen*, or the land *sunk*.

(1.) Suppose we allow the sea to have *risen*; a gratuitous and absurd supposition, I admit. But now while the sea thus elevated, deposits thirty six feet of blue clay upon this hill, it must deposit the same on the *cliff*, and on all the adjoining neighbourhood, as far as the sea extends. For it is impossible the sea should deposit clay upon this hill and no where else. But as there is *no* deposit upon the cliff, &c. it is quite certain that the sea cannot have *risen* above this cliff, and above this “*fresh-water* formation.”

(2.) The hill then must have *sunk*. Yes, and the hill only, not the cliff or adjoining country; for then *they* would have received (as above observed) the same marine deposit with the hill, which they have not. The hill then, and the hill alone must have sunk, and remained under the sea during the formation of this marine clay, of thirty six feet thick. But here again our old difficulties occur.—As this hill is now supposed to have been sunk *into the sea* during this thirty six feet deposit, there can be nothing like a *basin* or limiting boundary to confine the deposit to this hill,

which is now become a part of the bottom of the sea. This same deposit then must have been as extensively formed as the sea was extensive, and could not be confined to this hill.—But again. As this marine formation is *now* above two hundred feet higher than the sea, and nearly the whole is above the cliff, how did it get from under the sea to be so much above it?

—The *sea* did not *subside* from this formation. For then the *cliff* (which we before saw, could not have moved) would have been two hundred feet above this formation, &c. &c.

—The *hill* then must have been *again raised*. But how?—By “volcanic fires” it certainly could not; for the *stratum* is *clay*, and lies (nearly) *horizontal*. Any *uneven* pressure, therefore, from beneath, would destroy the whole formation.—It must have been raised whole, and vertically. But no natural “convulsion” can be assumed to have done this. The whole was miraculous.

3. The “upper fresh-water formation”, *fifty-five* feet thick, lies above this upper marine formation.

This formation is between *two* and *three hundred* feet above the sea, and therefore entirely, or chiefly above the cliff. Respecting this formation, we must observe, that the higher we ascend the hill, the more difficult each deposit becomes. It is not possible that this “upper fresh-water deposit” could, at this elevation and in this situation, be formed by *natural* means. For this formation is now, and, if formed by deposition in a fluid, must have been when it was being deposited, upon *higher* ground than any part of the adjoining country; because it lies above the “upper marine for-

“mation”, which is itself above both land and sea. The very supposition, therefore, of “fresh-water formation on a hill like this, must imply several positive miracles.

(1.) The “marine formation” upon which this formation lies, spreads itself over the whole diameter of the hill; and its upper surface, before this fresh-water formation was deposited over it, was even and nearly horizontal. The whole top therefore of the hill would be like a flat table of clay, and would possess nothing whatever of the nature of a *basin* or a *lake*; nor could any thing make it so, consistently with this Theory, but a direct Miracle.

(2.) No “fresh-water” could now gain access to the top of this high elevation. *Rivers* could not supply water, for the hill is elevated far above them all. The *rain* could not, for there is no *lake* to retain it. It would therefore run off and wash away the “marine clay” with it.

(3.) There are no natural means of obtaining *deposit* upon this hill, for *fifty-five* feet depth of stratum. Where did the mass of *earthly matter* come from, which forms the zone of this hill, nearly *twenty yards* thick? No rivers could bring *mud* upon it, by any possible operation of nature;—there are no *walls* from whose sides a deposit could be washed off by the waves;—It could not be washed or thrown up from the *bottom*, for that bottom is a “marine formation” and this of which we are now treating is a “fresh-water deposit;” and, by the very supposition of the “Theory,” the “marine” stratum is unmolested. It is perfectly demonstrable, therefore, that the process, which, upon

the principles of this modern Geological Theory, is supposed to take place in the formation of these successive "marine" and "fresh-water" deposits, involves numerous genuine and positive *miracles*.

This "fresh-water formation" compels us, on the Theory of modern Geologists, to suppose—1. That a *lake* was formed upon the top of this Hill nearly *three hundred* feet above the sea which washed its skirts, and nearly *one hundred* feet above the adjoining land. 2. That the *water* which could not, for the deposition of fifty five feet of mud, be less than *five or six hundred* feet deep, was sustained there for indefinite ages, *without walls* or any elevated rim to keep it from flowing off the Hill. 3. That this supposed lake was *charged* with *fifty-five* feet in depth of sandy, earthy, or rocky matter from no assignable source whatever.

All the above, and indeed many more, extraordinary things, (I might call them extraordinary *miracles*) belong to ONE formation. But on this Hill, and even above this "Fresh-water" deposit, there are many formations; with *each* of which *a number of miracles* must certainly be associated. But I forbear to enumerate any further the increasing difficulties which crowd in upon us as we advance in the successive steps of elevation belonging to the formations of this Hill. For though I have much more now lying before me, I begin to fear that (besides perhaps unnecessarily prolonging the discussion) it might rather generate in the reader, a sensation of the ludicrous, than of sober conviction, to press this modern system of Geology into the *extreme mass of absurdities* to which it is exposed.

I omit, for the present at least, as apparently unnecessary, several chapters of MSS. which I had prepared, on the *impracticability* of *revolutions* in the *secondary* strata generally; and on the *simultaneous* formation of the several primitive rocks, and also of the *secondary* formations, which Geologists assert to be *successive*, but which I consider the *interlocations*, *transitions*, and *alternations*, &c. &c. which abound among them, infallibly demonstrate to be *contemporaneous*.—With respect to *simultaneous formations* it is an *inference* which must inevitably follow from the subversion of the *successive* system.—And as to *revolutions* in the secondary strata *generally*, the careful reader has nothing to do but extend the reasoning which we have applied to the subject of *basins*, to the secondary strata at large.

For, 1. The *strata*, whether in the form of *basins* or otherwise, are essentially of the same nature; and, from the assumed *succession* of SEA and LAND *fossils* which they contain, must *certainly* have been attended by the alternate occupation of *sea* and *land*. 2. These *BASINS* afford modern Geologists great part of the evidences and illustrations of their *general* “Theory.” Any thing, therefore, which may be found in the secondary strata at large, which essentially differs from the specimens derived from these basins, must be considered as *extraneous* to the geological system; and if we have succeeded in proving their views of these *basins* to be erroneous, all their evidence of successive revolutions is destroyed.

The reader must now, however, understand that this Hill is only ONE specimen out of MANY, and that I

have scarcely exhibited one quarter of the monstrous, unnatural, and impracticable features which belong, according to this geological Theory, to the formations of Headen Hill.

In closing the first Volume, I would just call to the reader's recollection, *three* points which are each of VITAL importance in our contest with modern Geology. We have, I trust, indisputably proved

1. That modern *Geology* cannot possibly exist consistently with a fair and literal construction of the *Word of God*.

2. That the *evidence* on which it professes to stand, is frequently *assumed*, is most *unsatisfactory*, and *self-destructive*.

3. That, independently of the testimony of Scripture, and of very defective evidence, it is utterly *impracticable* and *impossible*.

I may therefore sincerely assure the reader, that I do not remember ever contemplating any work claiming to itself a scientific and philosophic character, which, like modern Geology in every department, offends so grossly against the acknowledged and established laws of "physical and chemical science", and even against the plainest dictates of common sense.

END OF VOL. I.

