Mod Science in
Bible Lands
&
Fossil Men

Antiquities

Fossil Men
Evolution

Can we do without the bible —
when its beauties its speaking to
the heart — its — [illegible] to
the human soul — [illegible]

Ten [illegible]

Man
People
Home
[illegible]
Week
God
[illegible] or Dew
[illegible]
Work

[illegible]
Summary on
[illegible]
[illegible]

Nature May 4/76
No remains of man later
than Pleistocene
Man not lower than
present [illegible]
No trace of man
lower than [illegible]
[illegible] in any [illegible]
[illegible] with
monkeys

Can we do without the bible —
when its beauties its speaking to
the heart — its — stimulus to
the human soul — [illegible]

11

Flowers
Summary of
Evolution of
man

Nature May 4/76

No remains of man earlier
than Pleistocene

Man not lower than
present low races

No traces of man
lower than those
forms in any way
intermediate with
monkeys

Murri

Rev W Ridley says of Murri
race Australian
Believe in Creator
Baiame from Bora to
make
Good go to & Baiame and
are placed in
Milky Way
Bad perish at death

Their marriage system
is that of Fanand
& Americans

Notes on Scandinavian myths

Odin = Hiawatha

Thor god of thunder
weather
storm

Jotuns = Kukwiss
giants &c

Loke = Fire

Rime = frost

Hymir = Berg

Balder = Sun

Lety Artemis

Hela = Atahensic
goddess of Love
Venus = Hera

Aegir god of Seas

All these Jotuns
= evil monsters
connected with frost
& snow

Ygdrasil = The tree of
Existence =
Sacred tree

Dall
Bos 1869
S. Fran

Relation

Weaker & Stronger

In chemical Oxygen & Iron
[illegible] by Hydrogen — they
of Oxygen all of [illegible]

In Spirit Vitreous &
[illegible] in [illegible] [illegible]

In Early multiplication of
Cells — cells of
germs —
Then of Races
of Medes [illegible] [illegible]

New [illegible] [illegible] [illegible]
[illegible] &
[illegible]
[illegible] [illegible] [illegible]
of [illegible]

What of the [illegible]
any [illegible] day
of [illegible]
[illegible] day

see Goeler for people & Dunné

Dunné Teunéa Chippeuyans

Akin in Language features to the Esquimaux

They are severally [illegible] by

Detached parties on West Coast

Chenooks or flat heads are of this race

Knisteneaux — the [illegible] or Crees & Chippeways are Algonquins

Ininger is = man & similar to Ininit

Sepe = river with them

[illegible] or [illegible] Dwellers

Gepuchekan is = Blackfoot or Manatta

Chippeways of [illegible] point

Need the imitation of [illegible]

[illegible] [illegible] by Priests & [illegible]

as any [illegible] & [illegible]

[illegible], they [illegible] [illegible]

of [illegible] [illegible]

great [illegible] a chief [illegible]

[illegible] [illegible]

[illegible] [illegible] [illegible]

female

Cure

✗ Brundead — Feast at end of year

After death goes to [illegible] of [illegible]

Expense when will bear
make mark on Ru[illegible]
Tobs a bottle of bread once or
amount
Collins Follies St Louis –

Kulchur make permits – when
Red Indians
& Kulchur
Expensive camps was septem[illegible]

Rue Beads & Dealers be

Mrs Richardson
Diane Madame – Chaffieux ma
Same – purple – through [illegible]
[illegible]
Spring for Dog
[illegible]
[illegible]
[illegible]
[illegible]
Bracelets
[illegible]
They closed
[illegible]
Church [illegible]

Huxley on Haeckel

Huxley on Haeckel

the objects to antelopes are by mammals. Breeds were times — approach to more perfection & thinks Haeckel has not enough [illegible] of [illegible]

Reptiles must have existed upon land in Palaeozoic epoch

In Annual address 1870

Huxley "[illegible]" two alternative ancestors of [illegible] ~~[illegible]~~ [illegible] in [illegible] & have not been [illegible] or in other ~~[illegible]~~ which we have but [illegible] [illegible].

This [illegible] of [illegible] of [illegible] & [illegible] of [illegible] and of [illegible] in distant regions. New [illegible] of [illegible].

It is the old problem
of Whitney guns and
battery for priority see
these [illegible] also does
they in opposing Browning
about liability of [illegible]

Refer to the
address
in Genl H.

Kutchin a Loucheux

Paint small bag of red clay & black
lead carried at ~~waist~~ neck
Peaked skirts like Esqui
great women of beads
women wear from Shells

Shaman = medicine man

Make deer = pound

dancing in
female
circle

Burial — feast at end of year
X After death goes to [illegible]

Days of Creation

Poughkeepsie N.Y. May 9 1876

Dr. Dawson.

Dear Sir.

In your lectures in New York, you spoke of the difficulty occasioned by the fact that the Mosaic cosmogony tells of so high an order of vegetation as fruit trees so early in the narrative placing their appearance before either land or water animals, and you suggested that a solution may be found in some more ancient and undiscovered flora.

You are so far as I know the only writer who has seen and admitted the full force of this apparently unchronological arrangement. I admire the frankness and the courage with which you have done this. Our Bible has suffered greatly from the supposed necessity on the part of its friends "to explain" or "to reconcile" every thing, and, where that could not be done, to absolutely falsify the record in order that it should "harmonize" with the requirements of supposed "Science". You will readily recall the στερεωμα of the LXX and the firmament of our Version. The same thing appears in the verse which reads in our Version, Let there be lights in the firmament of heaven &c. and again in Job. 37.18. a most unhappy rendering excelled only (if possible) by "firmament."

Even Prof Dana ignores the difficulty &c.

you spoke, and "Hodges" by saying (Manual p. 767) "the account must bear the marks of human imperfection" and again (p. 768) "It is in the style of a sublime intellect wise for its times but unversed in the depths of Science wh. the future was to reveal."

With all respect for men wiser than myself, I would suggest that the physical & chronological difficulties grow less, just in proportion as we get closer to the literal meaning and exact order of the story, exactly as Moses wrote it. If in case of the perfected flora, we suppose Moses (or the Author) meant the very thing wh. he wrote viz. grass and trees bearing fruit whose seed is inside of it = angiosperms and palms the whole difficulty vanishes. These did appear before "living" species of water animals, fowls, and land animals, and in the Cretaceous Mivers & Sharon what is more they appeared and became dominant about the same time (the Continents attained their completion, and certainly Moses makes no error when he announces one day of completion for both.

So too the intercalation of some great climatic change having to do with "seasons", [illegible], is in harmony with the fact that between these two biological events, occurred a period of intense cold separating the ancient type of climate from the modern, the former distinguished for an absence of "Zones of Climate" (Dana) as the latter is by their presence

If we could discover the physical changes which occurred in the interval we should be better able to judge why the Author of the Narrative placed the work of the fourth period between the third & fifth.

Perhaps the present state of knowledge, is such that this problem can be successfully grappled with. At least I have attempted it and have embodied my results, & their reasons, in an Essay read before our local Society entitled, "Studies upon the Cause & Epoch of the Present Inclination of the Earth's Axis". A copy of wh. I shall take the liberty of sending you. You will see however that whatever may be the theological bearings of the question, it is discussed purely from a Scientific Stand-point.

I have also been engaged not in an attempt to "explain" Genesis nor to "harmonize" nor to "reconcile" Genesis & Science, but to collate the statements in Genesis with physical science bearing on same subjects, and have found the Mosaic Cosmogony the most intensely literal and chronological Statement ever written.

As you have given this matter study and from your large acquaintance with the Record of the Sky & Rocks so capable of judging of the fairness and accuracy of with which my work has been done, I shall take great pleasure in sending you a copy, if you desire it.

I have been led to a new theory of the "days", viz. that the work was done in an interval of unknown length, was then inspected & pronounced "good" i.e. completed and the day on wh. the verdict was rendered was the 2nd, 3d ——— &c. of the series.

A homely illustration will close this long letter the only apology for wh. is a common interest in a subject of inconceivable importance.

In a brief epitome of our history I might say "my child America was discovered on a certain day and that was the first day of our history."

The English settled at Jamestown & that day was the second day of our nation

The Pilgrims landed at Plymouth & that day was the third of our nation's history.

The Declaration of Independence was the fourth day

Lincoln's Emancipation Proclamation was issued on the fifth day of our history and

Next Fourth of July will be the centennial, the Sixth day of our history, and within these six days God built up our nation.

Yours respectfully

L. W. Warring

The title of my book is
The Mosaic Account of Creation
The Miracle of To-day.

Warring
Compares Spencer's fallacy of evolution's purposes
intentionally —
not God's knowledge of Spencer fallacy

Spirit of God moving = undulations of the
elements of ether
before the commencement of things

Tyndall says "the whole process of
evolution is a manifestation of a power
absolutely inscrutable to the intellect
of man; as little in our day as
in the days of Job can man
by searching find this power out

He says moreover —
But it is one thing to seek a power
another to find out"

Theophobia of modern writers

Quotes Lange on Genesis P 109
for idea that Elohim means
Dunameis or powers

Mc Gill College.
Montreal.

June 19/76

My dear Sir,

The book about
you wish to know as to
which has been on
my table for some weeks,
and which I hoped to
find time to look into
it, before writing to you
in acknowledgment,
but without success.
Occupied as I am here
with the struggle to maintain
a little education and
scientific light with inade-
quate means and in the
midst of an dominant
and aggressive ultramontanism,

out the Palaeozoic annals
and plants from the
Miocene record. Upon
also that too much
is built on the very
mythical "glacial period"
of Agassiz, Dana & others,
about the extent of
which all the better
geologists have grave
doubts, and upon
the very doubtful
question as to changes
of the earth's axis, which
are really only beginning

you must excuse my apparent neglect,

I planned hastily at the last opportunity, and shall hope to read it more carefully in the summer. In general I agree with it in its spirit, as you will see by looking at my "Anchain" published in 1860, and I see in it many original and valuable thoughts, but I cannot quite agree with its view of the "days" nor at all with its leaving

be discussed. The
latter part of the
book I have however
scarcely yet looked at.
I am however engaged
in re-writing "Archaic",
and in connection with
this will look into also
these questions, as Orelli
and many others are
now putting them, and
shall try to arrive at
some definite conclusions.

Excuse this hasty note,
and believe me

Yours sincerely

J. W. Drummond

C. B. Warring Esq

Mans evil according to Bible
sin against God — implies that not
godless merely but related to God of God
in image of God for return to him

opens for Philosophy — tendency to evil — unfolding
nature which to be converted —
This Plato's view
Alpha Ochu Gould

Modes of origin according to Bible

1 Parthenogenesis — Jesus

2 Spon — Eve

4 Elements Adam

5 Sexual Prog. [illegible] Landless [illegible]

6 Nato Prog. [illegible] Abraham

Develop there in Archaic

On Polar temperate [illegible]

See Lyell Page 88 of Principles —

Solontré & the Referred to

Sketch Plates

Mottos for Newfound Ward

God has made of one blood
— Paul

Four days is the spirit's journey
to the land of ghosts & shadows
Four its lonely night encampment
— Longfellow

Peters doctrine of [illegible] [illegible]

Doctrine of Thales of Miletus that all from water
= Bastian's doctrine
A. germination of a seed
original germ or seed organism of life
= Darwin

Anaximenes of Miletus infinite air or ether the
Principle of all things.
Soul = air – Life = air = Element of space = air

= eternal motion of air cause of all things
Tyndall heat a mode of motion.
Warmth & cold by mere alternation and condensation of the air

Diogenes of Apollonia
Breath = Soul
Human soul & which of beasts same but different in degree
Speech of man the [illegible]

Heraclitus of Ephesus
Fire the primitive principle
Self-evolved and all-producing
He was a theist & monotheist

Relations of fire & earth & ultimate conflagration & renovation

Anaximander of Miletus (Olymp 62)
All things originated in the infinite
It is mixture of all things
eternal motion of the infinite
Evolution by separation & differentiation

1st a mud-cell enclosed in a sphere = primary animal
2 Infusoria was produced [illegible] of [illegible]
3 Man the final evolution from other animals
as from dead matter
He gave first and supreme separately [illegible] neutralises each other
[illegible] into infinite & begin a new circle

Notes Greek Plus

Ritter

The Origin of the World — according to Revelation and Science.

To Hodder June 1879

My dear Sir

Since you called on Sunday I have been thinking of a title for this work I mentioned and it seems to me on the whole best to call it

Fossil Men

and their Modern Representatives

An attempt to illustrate the characters & condition of Prehistoric Men of Europe by those of the modern Races.

This will enable you to change the printed Sheets of [illegible] and not the [illegible] [illegible].

Species & Artemia

Weismann believes that the rapid change of S into A. indicates that in A. [illegible] gradually changes into S & still earlier S into A of Darwin's rule.

But Schmankewitsch finds Artemia Salina in salter water rapidly degenerates into A. Mülhausenii and this in fresher water equally rapidly [illegible] into a Branchipus

Nature June 8/76

The Origin of the World
A Problem
with its Solutions

I The Semitic Solution
In the Old Testament

II The Iranian Solution
In unwritten Myths
and Traditions

III The Aryan Solution
In modern Theories
and Speculations

IV The Christian Solution
~~In the New Testament~~
Religion and Scientific

IV. The Harmonies of
the whole

Memo:
Archaeo

General Plan

Messrs
[illegible]
[illegible]

speculative and scientific investigation and they never even be trying to raise themselves by these lines to the level of the respective and to the comprehension of the organ of thought. It would be a long and thankless task to try here to give the figures of great speculation in of the recent philosophers of repute who have been and seen the [illegible]. My [illegible] up [illegible] in words of Spencer Mill & Tyndall.

With respect to the content of all this [illegible] older organ [illegible] it is plainly and clearly [illegible] to an extent for a confusion between Tyndall and an adherent of the Brahma Samaj.

which I see manifested in the universe an objective form, personal or otherwise, it slips away from me, declining all intellectual manipulation. I dare not, save poetically, use the pronoun 'He' regarding it. I dare not call it a 'mind.' I refuse to call it a 'cause.' Its mystery overshadows me, but it remains a mystery, while the objective forms which my neighbours try to make it fit, simply distort and desecrate it."

It is an old, old story. The "scientists" of our day are in possession of finer and more powerful instruments than our fathers had, and they have penetrated far deeper into the mysteries of the material universe; but they are only supplying to us fresh confirmations of the revealed fact that it is not by means of human philosophy, however far-seeing, that the living God is to be reached and known. "Where is the wise? where is the scribe? where is the disputer of this world? hath not God made foolish the wisdom of this world? For after that in the wisdom of God the world by wisdom knew not God, it pleased God by the foolishness of preaching to save them that believe." Professor Tyndall has been employing a method which we have good reason to believe to be unsuited to the work in which he has been using it, and the faith of no Christian man can be shaken by the information which he has published, that he has searched through the universe, and can find no trace in it of the presence of a controlling mind.

We have not seen anywhere in this country the report of a remarkable interview which took place a good many months ago between Dr. Tyndall and a representative of the Indian Brahmo Samaj. The account appeared in the *Calcutta Theistic Annual*, and illustrates in such a striking way the position of the professor, that many of our readers will, we are sure, be glad to see it while the impression still lasts which has been produced on their minds by the strange article in the *Fortnightly*. The writer is Baboo Protap Mozoondar. After describing his introduction to Tyndall, he goes on to say:—

"My conversation with him was of course exclusively on the subject in which I am mostly interested. He seemed positively unwilling to accept the usual religious phraseology. Even to the word God, if I rightly remember, he objected. The reason for this was that he fervently disapproved of the philosophical ideas attached to such words by popular theology, the reaction against which in his mind was extreme. How far, in discarding these theological ideas, he has discarded the essential truths of simple theism, it is not easy to determine. Only it seems logical, and therefore, in the case of a man like him, true, that holding the bold and most unequivocal creed of materialism, he cannot assent to the plain propositions as to Divine nature and its relations with the universe, that to us are so sacred. But, nevertheless, the moral enthusiasm of his nature is very great, and so far supplements the deficiency of what may be technically called religious culture, that in almost denying, or very dimly perceiving, the reality of religion as an element of man's higher intellectual consciousness, he clings tenaciously to what he calls 'the emotions,' and out of them constructs a 'Mystery,' that pervades all things. From that mystery he emerges into a 'Life,' from that into a 'Presence,' and from the 'Presence' into a 'Spirit,' which, in the language of Wordsworth quoted by him, 'impels all thinking things, all objects of all thought, and rolls through all things.' What he did not seem to like was to formulate into a fixed doctrine this 'fluent life' and 'spirit' of the universe. As for myself, I do not complain of any one coming to realize through life and emotion what I myself realize through mind, heart, and will alike; but I cannot accept the idea of a 'fluent' God that has no part in the fixity of human convictions, and of the laws that regulate all things within and without. If by 'fluent' is meant 'progressive,' that our ideas on the subject of God are ceaselessly growing with the growth of man's nature, I admit the word. But I admit it with the proviso that there is an element of fixity in it, an everlasting truth and certainty that ever develops and never declines, that would outlive the wreck of all false faith and all false philosophy. I must take the liberty of observing here that Professor Tyndall's faith in this matter seemed anything but decisive. Even in my presence there seemed to be a continual ebb and flow of conviction in his mind. The impression with which I left him was that his whole nature was glowing with a deep, vague, and transcendent sense of the Divine life, beauty, and love; but his intellect, self-bound, loyal, and logical to its creed, hesitated and failed to grasp or admit the import of that Life upon the origin, growth, facts, and laws of being. It is a gross injustice to call him an atheist. 'Working in the cold light of the understanding for many years,' he said in effect to me as we rose to part, 'we here *do* feel the want of the fire and vigour of that Life. It is all but extinct in England. In saying so, and in not accepting it at the hands of those who have it not, I have become unpopular. Let those who have the Life give it unto us. To you therefore in the East we look with real hope; life came from those regions once before, and it must come again. Take, therefore, my hearty sympathy and goodwill.'"

Two things are peculiarly suggestive in the above account. One is that Professor Tyndall is restless in his unbelief. He knows neither peace in his heart nor absolute and settled satisfaction in his own mind. The other is that, if the Baboo has not misunderstood him, he believes with Mr. Disraeli in the Great Asian Mystery! The East is the chosen land of inspiration, and if the angel Gabriel were again to visit Bethlehem, perhaps the professor's philosophy would give way to faith.

THE ROMAN LEAVEN IN ENGLAND.

A paragraph has been going the round of the newspapers, giving a list of recent secessions from the Church of England to Rome. The list is a very formidable one.

It includes, among others, the following names:—The Rev. W. M. Hunnybun, M.A., and the Rev. Verney Cave-Brown-Cave, M.A., both of All Saints', Margaret Street; the Rev. J. R. Madan, M.A., President of the Missionary College, Warminster; the Rev. G. R. Burrows, B.A., of Liverpool; the Rev. Alfred Newdigate, M.A., vicar of Kirk Hallam, Derby; the Rev. Willis Nevins, of Southampton; the Rev. H. J. Pye, rector of Clifton-Campville; the Rev. George B. Yard, M.A. (brother of Canon Yard, just elected Proctor in Convocation); the Rev. John Higgins, B.A., curate to Prebendary Clarke, of Taunton; the Rev. Septimus Andrews, M.A., student of Christ Church and vicar of Market Harborough; the Rev. C. H. Moore, M.A., student of Christ Church; W. M. Adams, B.A., Fellow of New College; Rev. W. C. Robinson, M.A., also Fellow of New College, Oxford; the Rev. F. Down, and F. M. Wyndham, of St. George's East; the Rev. George Akers, of Malling, Kent; the Rev. Gordon Thompson, of Christ Church, Albany Street; C. Moncrieff Smith, of Cheltenham; the Rev. Reginald Tuke, of St. Mary's, Soho; the Rev. M. Tyler, of Oriel College; the Very Rev. Dr. Fortescue (brother-in-law of Archbishop Tait); the Rev. W. Humphrey, of Dundee; the Rev. T. H. Grantham, of Slifod; the Rev. Lord Francis G. G. Osborne, of Elim; and the Rev. R. S. Hawkes, of Morwenstow.

In view of this calamitous outflow of the life-blood from his communion, one reads with a sort of *dazed* feeling the peroration wherewith the Bishop of Lichfield ended his inaugural address at the Stoke Church Congress. "I cannot doubt," said he, "that the Anglican Church is the true centre round which may be rallied in God's own time all the scattered forces of those who agree in accepting Holy Scripture as their standard of faith, and the creeds of the undivided Church as their summary of doctrines. Stretching out her arms to the great English-speaking race, now widely scattered round the earth; welcoming to her communion the Old Catholic, the Greek, the Russian, the Lutheran, the Scandinavian, the Wesleyan; bearing with any errors she may discern in other branches of the Church as she hopes her own may be forgiven; agreeing with them in well-defined statements of necessary and fundamental truth; commending herself to Jew and Gentile by her visible unity—she may press on to the development of a catholicity as wide and as complete as is possible to be attained, until Rome, awaking from her dream of universal empire, shall be content to be, what she was at Nice and at Ephesus, one among many living stones, built up into one Holy, Catholic, and Apostolic Church, Jesus Christ himself being the chief corner-stone."

No one knows better than the Bishop—for he has been in Australia and America—that the Episcopal Church, while it is the largest and most influential of the English denominations, is, after all, among the smallest of the Protestant sects, when the Churches of the Reformation are viewed together. Yet, when he calls up before his mind's-eye the vision of a reunited Christendom, he looks east and west, to Rome and Constantinople and Copenhagen, and has not one crumb of comfort to cast to those of his own kith and kin that lie near his own door. Yes! he has a friendly word to speak to one of the outcast races. There is a place of repentance still for the Wesleyan! But of the descendants of the Puritans in England,—of those who, in Ireland and Scotland, have the blood of the Covenanters in their veins; of those across the Atlantic whose fathers went over in the *Mayflower*,—he has apparently no more recollection as fellow-Christians than if they had been heathen Malagasy needing to be evangelized. Well, well! All we shall trust ourselves to say in the way of criticism is, that the bishop's position is a very melancholy one. It may be that the Church of England is in the centre of things, and is to form the nucleus of a new Church Catholic; but if so, we trust that, when the critical time comes, its guiding spirits shall be men who shall be able to recognize the Christianity of a Puritan as well as of a Papist.

And here, by the way, we may note that a new *Church Quarterly Review* has appeared, with a great flourish of trumpets, for the defence of the faith. Mr. Gladstone and Mr. Beresford Hope are among the contributors to its first number. But here is its own account of its position:—"Our own standpoint is that of progressive English High Churchmen of Tractarian Extraction, who will neither admit that the modern Ritualists can show any right to dictate to their more prudent and more Anglican and national brother High Churchmen, nor that those High Churchmen are justified in abandoning the Ritualists, because of some waywardness, to the ravages of the Puritan wolf."

There is not much that is hopeful there! The alarming thing about England at present is, that among too many there is more fear, a great deal, of the Puritan wolf than of the Papal bear.

MR. MACLAREN OF MANCHESTER.

It is rather remarkable that at least three of the most popular preachers in England at this moment are Baptists. We refer to Mr. Spurgeon, Mr. Arthur Mursell, and Mr. Maclaren of Manchester. Of these three, the man of the truest genius is unquestionably Mr. Maclaren. His sermons are not only deeply interesting to listen to, but they can bear being read once and again. Having a mind which is at once fresh, original, and well-informed, his treatment of any theme he may take up is always striking and suggestive; and this, with his clear, rich, and vigorous diction, has secured for his discourses circles of readers within which even the Metropolitan Tabernacle Pulpit has never penetrated.

Mr. Maclaren has recently been appearing in what, to us at least, seems an unwonted character—as an ecclesiastic. He has been called to the most honourable position which his denomination can offer—that of

Reade
on Thursday
Colley

Aryan Solutions

Believing the Aryan or Indo-european peoples as stated in the preceding chapters, ~~as stated~~ to be of comparatively late origin and derivation from the Palaeocosmic Iberian race we need not expect from them much information as to origins. What they do know consists first of ancient traditions extant in India & Persia more or less coincident with those of the Iranian & Shemitic peoples and the conclusions which they have themselves worked out for philosophical and scientific investigation. For it is among these peoples chiefly that speculation and investigation has endeavoured to penetrate backward from our modern standpoint into the origin of things. The Aryan peoples have properly no religion of their own. Buddhism is almost Iranian in its whole spirit & its origin. Brahmanism and Parseeism are not ancient in comparison with the religions we have studied and bear in them the impress of derivation from more primitive faiths modified by recent speculation. The religions of Greece and Rome were largely Semitic derivatives. Druidism was a remnant of Iranian faith. The theism of the Vedas is perhaps the only remnant of what may be called Aryan religion all the rest down to our modern Christianity are only variously modified forms of Semitic ~~faith~~ faiths. But the Aryans have been rich in philosophical

Abolition to Africa

Della Brys Rests [illegible]

Mechanically an waste

Stockholm Canal in 1825

Extent of African Ports

Additional Islands [illegible]

Note on Goan

Lebanon Inscriptions

Do Caves &c

Hittites

Round Tile Tell El Yehudeh

Ut-a the holy Eye

Rock disintegration

Delta Burying

Sweetwater Canal

old

Intent of Hosman

---

guela, on the Western ...
from this country would have been a good deal more costly, and of which the success, judging by such accounts of the climate of Benguela and its neighbourhood as we could procure, seemed very doubtful. The committee guaranteed, however, £100 towards the expense of a small expedition from the Cape in case Her Majesty's Astronomer at that place should be in a condition to organize one. Sir W. J. Hunte-Grubbe, the Admiral in command at that station, was prepared to render every assistance in his power. Ultimately, however, it was not found practicable to organize an expedition from the Cape, and so the English observations of the eclipse were confined to those taken at Grenada. I have heard that the day of the eclipse was fine at Benguela, but there were no astronomers of any nation there to take advantage of it. It may be doubted, however, whether, in spite of the fineness, the haze which is said to prevail so much on that coast at that time of year might not materially have interfered with the observations

Rock disintegration in hot, moist climates.

Some remarks of Nordenskiöld, in his 'Voyage of the Vega,' pp. 707–713, relating to precious stones, suggest the thought that the marked differences which occur as to the manner and rate of the weathering of granitic rocks at the north and at the south

can hardly be so familiar to European scientific men as they are to American observers. At the south it is common enough to find soils that have been formed 'in place,' from the thorough and deep-seated chemical decomposition of the rocks on which they rest; while at the north, well-marked disintegration of this sort is rarely met with, even in places where the observer is not perplexed and confused by the mechanical results of glacial action. The subject has often been alluded to by American geologists, working in our southern states, notably by Professors Kerr of North Carolina, and Stubbs of Alabama, who have expressed themselves in the following terms: Speaking of the geologic formation which, "after hugging the east side of the Appalachian chain of mountains and forming some of the most valuable farming lands of the Atlantic states, enters the central eastern part of Alabama," Professor Stubbs says, "The rocks which by disintegration have given the soils of this section are mainly granites, gneisses, feldspars, hornblendes, mica-schists, etc.; and much the greater part of the section is covered by soils which have resulted from disintegration of the above-mentioned rocks *in situ*. And here I may remark a notable feature of these soils, — a feature which cannot fail to arrest the attention of every northern geologist: viz., that decomposition of these rocks in southern latitudes has proceeded much farther than with the same rocks in higher latitudes, and therefore has given us deeper soils. It is difficult to find in the north a soil over a few feet deep; while here it is not uncommon to find in railroad-cuts, wells, etc., disintegrated strata to the depth of thirty, fifty, or even seventy-five feet. This can be accounted for to a large extent by climatic influences. The warm waters, charged with carbon dioxide, percolating throughout the year the easily permeable strata, act continuously as a chemical agent in the work of disintegration; while farther north not only the amount of water, the temperature, and the chemical activity are reduced, but for one-half of the year the soil is locked up by frost from all access of decomposing agencies."

The influence of these soils of disintegration upon the agriculture of the regions in which they occur, has often been noticed; and their bearing upon the history of the use and manufacture of commercial fertilizers in this country is no less clearly marked. It would seem to be plain, that disintegration such as this, when accompanied with or followed by denudation, would readily account for the accumulation, and, so to say, concentration in 'pockets,' or other places of rest, of any heavy or refractory minerals which were originally contained, dispersed, in the native rock; and that among the multitude of individuals thus thrown together there would be much greater likelihood of finding superior specimens than can be obtained by searching the comparatively meagre deposits that are formed at the north.

The statement of Nordenskiöld, above referred to, is here given in condensed form.

"Precious stones occur in Ceylon mainly in sand-beds, especially at places where streams of water have flowed which have rolled, crumbled down, and washed away a large part of the softer constituents of the sand, so that a gravel has been left which contains more of the harder precious-stone layer than the originally sandy strata or the rock from which they originated. Where this natural washing ends, the gem collector begins. He searches for a suitable valley, digs down a greater or less depth from the surface to the layer of clay mixed with coarse sand resting on the rock, which experience has taught him to contain gems. . . . The yield is very variable, sometimes abundant, sometimes very small. . . . Sapphires are found much more commonly than rubies. . . . The precious stones occur in nearly every river valley which runs from the mountain-heights in the interior of the island down to the lowland. . . . But some one perhaps will ask, Where is the mother-rock of all these treasures in the soil of Cey-

Gneiss Disintegrate

ion? The question is easily answered. All these minerals have once been embedded in the granitic gneiss which is the principal rock of the region" (and which weathers readily). . . . "In weathering, the difficultly decomposable precious stones have not been attacked, or attacked only to a limited extent: they have therefore retained their original form and hardness. When in the course of thousands of years, streams of water have flowed over the weathered rock, the softer constituents have been for the most part changed into a fine mud, and as such washed away, while the hard gems have only been inconsiderably rounded and little diminished in size. The current of water, therefore, has not been able to wash them far away from the place where they were originally embedded in the rock; and we now find them collected in the gravel-bed, resting for the most part on the fundamental rock which the stream has left behind, and which afterwards, when the water has changed its course, has been again covered by new layers of mud, clay, and sand. . . . Of all the kinds of stones which are used for ornaments, there are both noble and common varieties, without there being any perceptible difference in their chemical composition. The most skilful chemist would have difficulty in finding, in their chemical composition, the least difference between corundum and sapphire or ruby; between common beryl and emerald; between the precious and common topaz; between the hyacinth and the common zircon; between precious and common spinel: and every mineralogist knows that there are innumerable intermediate stages between these minerals which are so dissimilar, though absolutely identical in composition. This gave the old naturalists occasion to speak of ripe and unripe precious stones. They said that in order to ripen precious stones the heat of the south was required. This transference of well-known circumstances from the vegetable to the mineral kingdom is certainly without justification. It points, however, to a remarkable and hitherto unexplained circumstance; namely, that the occurrence of precious stones is, with few exceptions, confined to southern regions. . . . Another remarkable fact in connection with precious stones is, that most of those that come into the market are not found in the solid rock, but as loose grains in sand-beds. True jewel-mines are few, unproductive, and easily exhausted. From this, one would be inclined to suppose that precious stones actually undergo an ennobling process in the warm soil of the south."

To the writer of this note, it seems more reasonable to suppose that the greater abundance of noble gems in southern climates should be attributed to the more active and thorough-going disintegration which occurs in those regions, and to the consequent — comparatively speaking — enormous accumulation and concentration of the precious minerals, as above suggested. Other things might be far from being equal, and yet the chance of finding a stone of price be greater in a heap of ten thousand rough jewels than in a collection which contains but a few score.

Bussey Institution. F. H. STORER.

July 1883

The November aurora in California.

Auroras are exceedingly rare phenomena in southern California; yet we had the pleasure of witnessing one Nov. 17, at which time a great electric storm raged over North America and Europe. The photographic traces during the time from Nov. 10 to Nov. 20 are very interesting; as they have preserved a perfect record of the twitchings and jerkings, large and small, fast and slow, to which the magnets were subjected during this time.

A slight shock of earthquake was reported here on Jan. 23, about 5.20 P.M. I was on the street, and did not feel it; and so far as I can detect no harm was done at the observatory. MARCUS BAKER.

Los Angeles, Cal., Jan. 26.

TRYON'S CONCHOLOGY.

Structural and systematic conchology: an introduction to the study of the Mollusca; by GEORGE W. TRYON, JR. Vol. I. Philadelphia, *the author*. 1882. 8 + 312 p., cuts, 22 pl. 8°.

WE have received the first volume of Mr. Tryon's new work (to be completed in three volumes), intended as an introduction to the study of the mollusks. This portion consists

× The Metamorphic rocks of Africa extend far to the South in East Africa according to Petermann's Map * It belonging [illegible] from Abyssinia where along to Mozambique [illegible] all the [illegible] upon have been [illegible] to the South until the river of the Zambesi whence probably extend to the Cape Colony. Taking these in conn with the belts of similar rock along the W coast we may fairly infer that the groups are widespread as constitute the general fundamental rock.

* Mittheilungen 1887

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of disintegrated rock cover the older
formations, while even those which
may have existed in the North
have been swept away by glacial agency.
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would have fully described them in this [illegible]

Nile Sediment

Subaerial
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belong to the historic period; and the reason of their occur-
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The oldest rock seen in passing from Beyrout around the point by the Lighthouse and Pigeon Island is the cretaceous limestone, which at this place is remarkably rich in large flint nodules. Upon the limestone rests a soft grey sandstone, used for building in the town, and containing in places fragments of recent shells. It is similar in its character to the modern sandstone of the Jaffa coast, and is, no doubt, of the same age. At one of the quarries a stratum of indurated deep red sand was seen to occur in the middle of the grey beds, and large sand-pipes, which traverse the grey beds perpendicularly, were filled with the same red sand, which also overlies the grey beds, and forms the surface of the highest part of the point, where it is more or less covered with loose wind-blown sand of a greyish colour. In one place, the lower grey sandstone was seen to be about forty feet in thickness, and the red sand is in some places as much as ten feet in thickness. The summit of these deposits rises as high as 250 feet above the sea-level. These sands are, probably, in great part products of the waste of the red and grey arenaceous beds of the lignitiferous zone of the Lebanon cretaceous, which occurs in the hills some distance behind. They belong to the modern or Pleistocene age, and to a time when the coast was submerged to the amount of 250 feet below its present level. At a place called the Bishop's Garden, behind Beyrout, and opposite the mouth of the ravine of the Beyrout river, there occurs a thick bed of grey and red conglomerate, capped with red sand, and which I believe to be a more inland representative of the coast deposit.

At the Ras of Beyrout the bed of red sand contains no stones or other foreign bodies, except near the surface, where it seems to have been disturbed and re-deposited by the action of the rain-water; but on its surface it holds small

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* Quarterly Statement.

stones, fragments of coarse pottery, and even of glass, and flint flakes and implements, which are partly covered with blown sand (Pl. II.). Among the stones I found fragments of vesicular trap, which may have been imported for millstones, and a small piece of Egyptian granite. All these bodies are mixed together, without anything to determine their relative ages, and they are most abundant at the surface of the red sand, and immediately under the drifted sand, or where it has been removed by the wind. The flint flakes are much whitened by weathering, and evidently of great antiquity, and with them are many large and irregular flakes, probably rejected as useless. A few spear and arrow heads have been found at this place. I found only one fragment of a lance or spear, but this had evidently been worked with some skill by pressure on the edges, in the manner now employed by the American Indians (Pl. I., Fig. 1). A small flake of obsidian, with a rounded indentation at the edge, as if intended for use as a hollow scraper, was also found, and may indicate the importation of this material for the manufacture of implements.

The fact that these flint implements occur along with pottery and other city refuse, probably implies that they belong to the historic period; and the reason of their occurrence here may be that the place was occupied by native tribes who came to trade with or to attack the Phœnician colony; or that it was resorted to by such people, because of the abundance of good flint in the limestone near this place. The deposit might thus seem to connect the time of the foundation of the early Phœnician colony with that of the later flint folk. It is, however, possible that an older deposit of flints may have subsequently been buried with city refuse, which is still being carted out to this place; or, on the other hand, that the citizens of Berytus may have continued to use flint flakes and arrows at the same time with pottery, and when they were building edifices of stone.

A curious instance of this connexion was mentioned to me by Mr. Sarruf, of the Beyrout College. He had found in a grave in the Lebanon, lance-heads of bronze and copper, along with flint flakes, thus showing the continued use of the latter after the natives had obtained weapons of bronze. On the other hand, Dr. Jessup, of the American Mission, has found, near Tyre, ancient tombs excavated in the bone-breccias of older prehistoric caverns.

Thus, in the Lebanon, we appear to have evidence of ante-diluvian or post-glacial cave-dwellers, belonging to the earliest known races of men, and of later Troglodytes and flint people, who must have continued in the country till it was colonised

by the Canaanites and Phœnicians, and who may have occupied the remoter glens of the mountains down to a comparatively recent time.

It is to be observed here that the present bare condition of these mountains must be quite different from their primitive state, when they must have been clothed with forests, and were probably inhabited by many kinds of game long since extinct. In this state, also, they would be much more abundantly watered than at present, and would possess a more equable, though on the whole cooler, climate.

It is also interesting to note the possible connexion of at least the later cave-dwellers of the Lebanon with some of those primitive peoples referred to by Moses in the Book of Deuteronomy, as having inhabited Palestine before its colonisation by the Canaanites and Semites.

If we endeavour, in conclusion, to sum up the later geological history of the Lebanon district, we may conclude that, like other parts of Syria, it experienced considerable elevatory movements at the close of the Eocene period, and further elevation in the Pliocene; that in the Pleistocene period it was submerged to the extent of several hundred feet, and at this time many of the ancient sea-cliffs and caverns were cut; and that in the early modern or post-glacial age it partook of the elevation which at this time seems to have affected the whole coasts of the Mediterranean. It may have been in this time of elevation, when there was probably much more land at the eastern end of the Mediterranean, that men first appeared and took possession of the country, and established themselves in the caves. These, however, they probably occupied only at those seasons when they needed such shelter, or when they resorted to the hills in pursuit of game. They may have had other stations, now submerged, in the low grounds or by the sea-coast. This state of things was closed by the great post-glacial submergence or deluge, of which we are now finding so many evidences in different parts of the world, and after this the present geographical conditions were established, and the period of history commenced. In this, the country, then wooded and tenanted by wild animals, was first occupied by rude tribes, probably of Turanian or Hamite origin, and afterwards by the more civilised Phœnicians.

logists attach so much importance to the prosecution of the inquiry that, at the suggestion of the Delta Committee, an application was made to the Government Grant Committee for a grant of £500, which was acceded to by the committee. This sum would not suffice for the prosecution of the inquiry to the extent contemplated, but it was thought that, with such a sum as a nucleus, extraneous pecuniary assistance might be obtained from societies or individuals specially interested in the inquiry, and the council have authorized the Delta Committee to avail themselves of such aid.

The Copley medal for the year has been awarded to the eminent botanist, your former president, Sir Joseph Dalton Hooker. It is impossible, within the limits to which I must confine myself on the present occasion, to do more than briefly refer to some of the more salient features of his scientific career, extending as it does over nearly half a century of unceasing intellectual activity; and I need hardly say that in attempting to give some idea of important labours which lie outside my own studies I am dependent on the kindness of scientific friends. As a traveller he can, perhaps, only compare with Humboldt in the extent to which he has used travel as an instrument of research. To quote a remark by Professor Asa Gray, "No botanist of the present century, perhaps of any time,

Prof. Dawkins has been so kind as to examine in a preliminary manner the specimens of teeth, &c., collected, and has authorised me to state that the breccia from the Pass of Nahr-el-Kelb contains remains of *Rhinoceros* (probably *R. tichorhinus*), *Cervus*, *Bos*, and *Equus*. In the earth of the probably more modern cave of Ant Elias are teeth of the hog, and of the goat or sheep, and an antler of the roe-deer. These facts are sufficient to indicate the earlier date of the Nahr-el-Kelb caverns, as stated above; but more detailed examination of the fragments of breccia collected will, no doubt, develope other points of interest. It is to be observed here that at the Nahr-el-Kelb River, Lartet has found a rock shelter which contains remains similar to those of Ant Elias, but these have not yet been found in connexion with the old caverns at the Pass.

In the breccia of Nahr-el-Kelb there are large and small knives of the ordinary form, curved flakes roughly chipped at one side, triangular flakes chipped at the edges (Pls. II. and III.), and a flake with the point rounded, and slightly chipped as if for a scraper. There are also remains of cores, and many minute chips, indicating that implements were made on the spot. No large implements of the Palæolithic type were observed. No charcoal was noticed, but a few of the fragments of bone have a brown colour, as if from exposure to fire. Some of the flint knives are perfectly fresh on their surfaces, others are much whitened and decayed.

In Plate III. I have represented some additional flint implements worked out from the breccia of the Nahr-el-Kelb Pass. Fig. 1 is a knife or scraper partly embedded in the breccia. One side has been shaped by fine chipping, or perhaps worn by use in scraping. Fig. 2 is part of a large flake, which may originally have been a spear or lance, but has been much worn at one side by use as a knife or scraper. Fig. 3 is a flake, which has had a curved notch chipped in one end, and the upper side chipped by use. Fig. 4 is a rough one-edged knife, much worn and chipped. Fig. 5 may possibly have been the end of a spear or arrow. Besides these there was found in a mass of the breccia a fragment of a stone hammer of diorite, broken by use. It may have been a naturally smoothed stone, or may have been artificially polished. As this kind of stone is not found at the locality, it may have been brought from some distance. It was reduced to a very fragile condition by decay of its felspar. There was also found in the breccia a fragment of crystalline alabaster, which may have been employed in the manufacture of ornaments, but no carvings or ornaments were observed.

In the cave earth at Ant Elias there are numerous and well-made flint knives (Pl. II., Figs. 2, 3). Some of these are very thin and delicate. There are also scrapers rounded and chipped at the edges, and many cores and minute flakes. A few of the fragments of bone are distinctly charred. Some of the knives and bones are encrusted with stalagmitic matter, but not in sufficient quantity to cement them together; and at the sides and front of the cave there are knives and fragments of bone enclosed in stalagmite, which is of a different colour and texture from that of Nahr-el-Kelb, and contains shells of a small *Helix*. Several specimens of the large edible *Helix* were found in the cave earth, and one shell of a small *Turbo*. No implements other than knives and scrapers were found, except a pointed instrument about four inches in length, and an inch thick at the butt, which had been roughly fashioned out of limestone.

According to Lartet (*Comptes Rendus*, 1864), Dr. Hedenborg was the first to direct attention to the Ant Elias caves, but he does not seem to have examined their contents. M. Botta was the first to notice the rock shelters near the Nahr-el-Kelb River, which Lartet himself afterwards explored, and which are obviously more modern in their contents than the breccias of the Nahr-el-Kelb Pass.

Appendix

Additions

to

Mod Square