



Hunt Institute for Botanical Documentation  
5th Floor, Hunt Library  
Carnegie Mellon University  
4909 Frew Street  
Pittsburgh, PA 15213-3890  
Telephone: 412-268-2434  
Email: [huntinst@andrew.cmu.edu](mailto:huntinst@andrew.cmu.edu)  
Web site: [www.huntbotanical.org](http://www.huntbotanical.org)

The Hunt Institute is committed to making its collections accessible for research. We are pleased to offer this digitized item.

#### *Usage guidelines*

We have provided this low-resolution, digitized version for research purposes. To inquire about publishing any images from this item, please contact the Institute.

#### *Statement on harmful and offensive content*

The Hunt Institute Archives contains hundreds of thousands of pages of historical content, writing and images, created by thousands of individuals connected to the botanical sciences. Due to the wide range of time and social context in which these materials were created, some of the collections contain material that reflect outdated, biased, offensive and possibly violent views, opinions and actions. The Hunt Institute for Botanical Documentation does not endorse the views expressed in these materials, which are inconsistent with our dedication to creating an inclusive, accessible and anti-discriminatory research environment. Archival records are historical documents, and the Hunt Institute keeps such records unaltered to maintain their integrity and to foster accountability for the actions and views of the collections' creators.

Many of the historical collections in the Hunt Institute Archives contain personal correspondence, notes, recollections and opinions, which may contain language, ideas or stereotypes that are offensive or harmful to others. These collections are maintained as records of the individuals involved and do not reflect the views or values of the Hunt Institute for Botanical Documentation or those of Carnegie Mellon University.

#### *About the Institute*

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

THE UNIVERSITY OF ROCHESTER  
EASTMAN SCHOOL OF MUSIC



SYLLABUS  
OF THE  
LECTURES  
UPON THE  
HISTORY AND LITERATURE  
OF MUSIC

A FOUR YEARS' COURSE IN THE GENERAL APPRECIATION OF THE FINE ARTS

BY

GEORGE BARLOW PENNY, B. S.

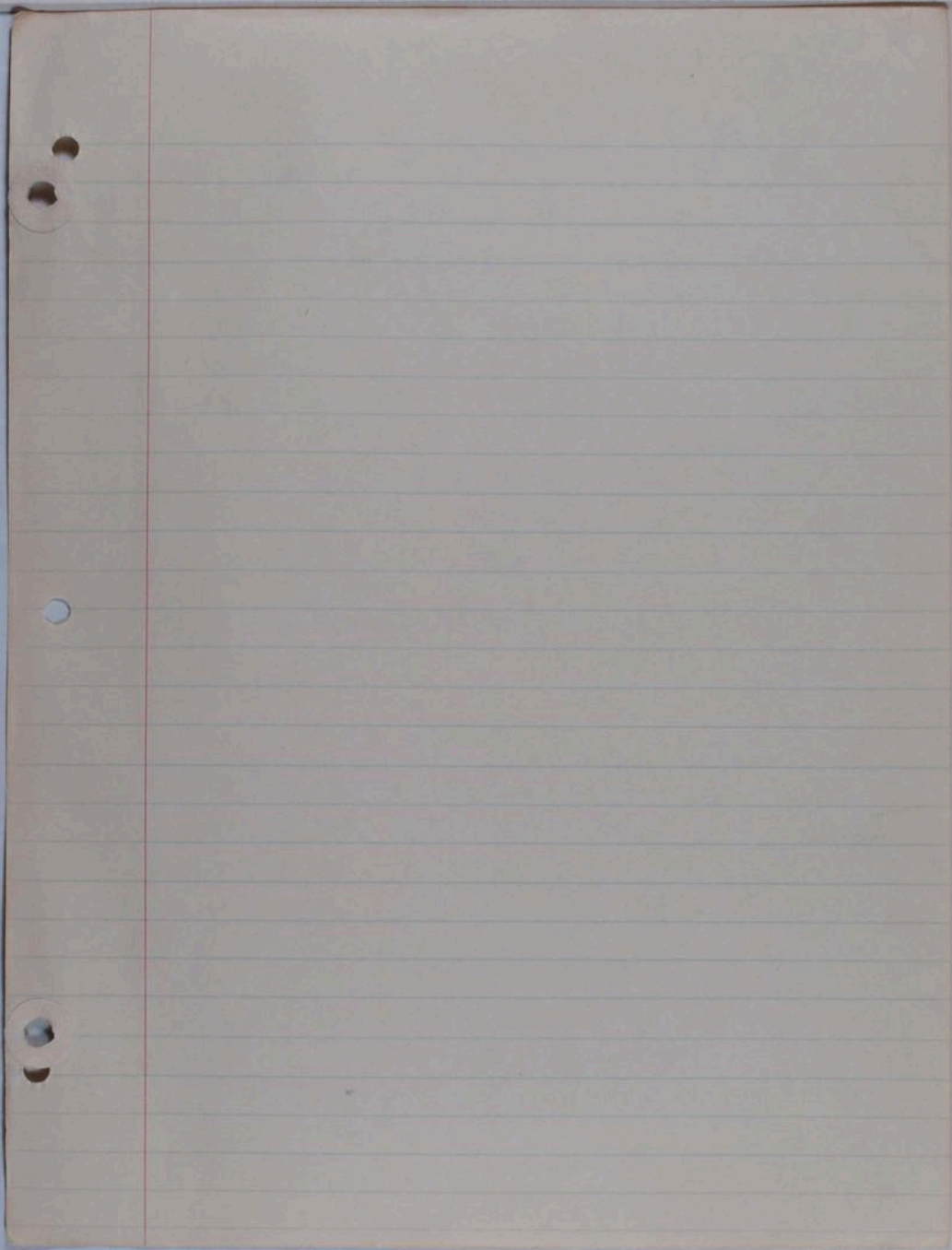
PROFESSOR OF THE THEORY, THE HISTORY, AND THE LITERATURE OF MUSIC



ROCHESTER, NEW YORK

THIS BOOK IS DEDICATED TO THE  
PEDAGOGY  
OF THE FINEST OF THE SEVEN FINE ARTS —  
THE SCIENCE ART LANGUAGE HISTORY LITERATURE PHILOSOPHY SOCIOLOGY

OF  
MIND — M V  | < — CHARACTER  
A SOUND SYLLABUS



THE UNIVERSITY OF ROCHESTER  
EASTMAN SCHOOL OF MUSIC

# STONES AND TONES

A FOUR YEARS' COURSE OF ILLUSTRATED LECTURES UPON  
THE EVOLUTION OF THE FINE ARTS

Architecture and Sculpture; Dancing and Drama; Poetry, Painting and Music.  
For students specializing in the finest of the Fine Arts—MUSIC

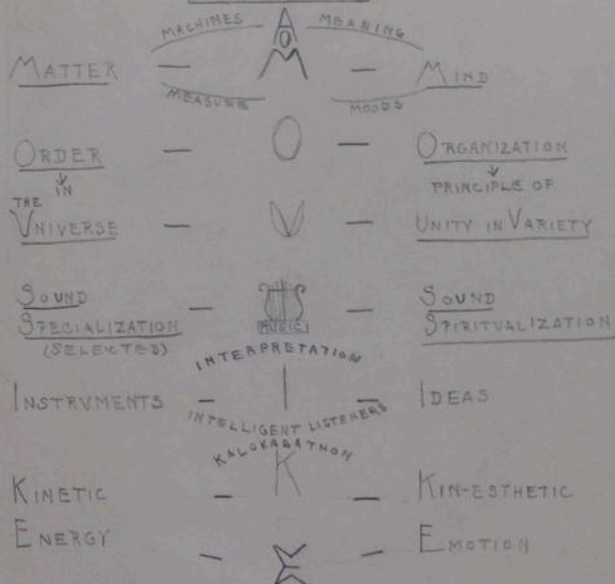
BY

GEORGE BARLOW PENNY. B. S.

PROFESSOR OF THE THEORY, THE HISTORY, AND THE LITERATURE OF MUSIC

- ORDER—LAW. 1. PHILOSOPHY, the Love of Wisdom. 2. SCIENCE, the Knowing. 3. ART, the Doing. 4. LANGUAGE, the Expression of Ideas. 5. LITERATURE, Printed Productions of the Human Mind. 6. HISTORY, Records of the Past. 7. SOCIOLOGY, Progress of Civilization. Culture. Science defines MAN as a Machine for the Acquisition, Retention, and Transmission of ENERGY. 1. SYNERGY. TONERGY.
2. Space and Time. 3. Matter, Music, Mind [Atoms, Rhythm, Thought. The GOOD, the BEAUTIFUL, the TRUE]. 4. Spheres—SUN, ATMO-, HYDRO-, LITHO-. 5. The University. 6. The Schools or Colleges [A "PART" OF vs. "apart" from].
7. THE SEVEN SPHERES OF THE SCIENCES AND ARTS.  
Darwin's "Descent of Man."
1. PHYSICS—Astronomy, Chemistry, Light [Color], Heat, Electricity, Sound [Acoustics], Mechanics.
2. BIOLOGY—Geology, Mineralogy, Paleontology, Geography, Botany, Zoölogy, Anthro-p-biology.
3. ANTHROPO-BIOLOGY—Ontogeny, Anatomy, Physiology, Anthropometry, Anthropolaxis, Phylogeny, Psycho-physics.  
Drummond's "Ascent of Man."
4. PSYCHO-FACULTIES—Imagination, Intelligence, Understanding, Memory, Affections, Will, Conscience.
5. ANTHROPOLOGY—Ethnology, Ethnography, Archaeology, Epigraphy, Folk Lore (Dance, Song), Mythology, History.
6. THE HUMANITES—Technology, Phylology, Sociology, Aesthetology, Philosophy, Ethnic Psychology, Hierology (Religion).
7. THE FINE ARTS—Drama, Dancing, Architecture, Sculpture, Painting;—Poetry, Music.
- THE OCTAVE—MOUSIKE (MUSIC)—Technique, Harmony, Counterpoint, Form, Instrumentation, Orchestration, History.
- THE PERIODS OF MAN—Magdalenian (Cro-Magnon), Mesopotamian, Mizraimian (Egypt), Minoan-Mycaenian, Mediterranean (Greece-Rome), Medieval, Modern.

HARMONY  
OF THE SPHERES OF BIOLOGY  
ANTHROPOLOGY



ARTISTIC  
INTELLECTUAL  
MUSICIANSHIP  
SOCIAL SERVICE

KNOW the Universe  
your Planet  
and Love Nature  
and Love Man kind  
Thyself  
your Instrument  
and Love MUSIC

{  
Voice  
Piano  
ORGAN  
Violin  
Orchestra

BEAUTIFUL  
TRUE COSMOLOGY  
WELFARE

# ANALYSIS

**HABIT HABITAT**  
**ATTENTION**  
**PIANOFORTE**  
**PRINT PAGE**

COOPERATION  
 PERFORMATIONS

**ACOUSTIC**  
**PHENOMENA**  
**PROPERTIES**

**ARTISTIC**  
**PARTS**  
**ATTEN-PRINCIPLES**

**ESTHETIC**  
**PURPOSE**  
**ARTICIPATION**

**ANALISTIC**  
**PREHISTORIC-PRIMITIVE**  
**PERIODS**

**BEAUTY**  
**GROUPS**  
**GRACE**  
**COOPERATION**  
**CLUSTERS**  
**FACTS**  
**DUTY**  
**FACTS - FACTORS**  
**FUNDAMENTAL**  
**FOUNDATION**  
**FORMULA**  
**FIXATION**

**AGDALENIAN**  
**ESOPOTAMIAN**  
**IZRAIMIAN (BIBL)**  
**INOAN-MYLENEAN**  
**EDITERRANEAN**  
**EDIEVAL**  
**ODERN**

**RECITALS** (VOCAL INSTRUMENTAL)

**EXPERIENCE**

**CONTACT** (CHAMBER - HOME ORCHESTRAL - HALL CHORAL - CHURCH)

**CONCERTS**  
**INQUISITIVE-INTEREST**  
**INSTRUCTION** (BOOKS LISTENING LECTURES)

**ACQUAINTANCE**  
**ACQUISITION**

**TONALITY**  
**ASTE-TYPES**

**INTELLECT**  
**MAGINATION**

**OPUS = WORK**

**NAMES** (COMPOSERS COMPOSITIONS VOCABULARY)  
**SOCIAL - SOCIAL**  
**MUSICAL TERMS**  
**ONG** (SACRED)  
**ONATA** (SECULAR)

**RHYTHM**  
**RELATIONS**

**EAR**  
**UPHONY**

**COLORS**  
**CONDUCTORS**

**INSTRUMENTS** (STRING WIND PERCUSSION)

**ALPHABETS**  
**VRAL CAUSE**

**IMBRE**  
**ECHNIQUE**

**INTONATION**  
**INTERVALS**

**VERTONES**  
**CTAVE**

**NUMBERS**  
**287654321**

**ERIES** (HARMONIC SCALES)

**RHYTHMS**  
**REPETITION**

**ELEMENTS** (LABORATION RHYTHM MELODY)

**COMPOSITION**  
**RAFTSHIP**  
**CONTINUUM**  
**DEAS - IDIOM**  
**INTUITION - INVENTION**

**ARCHITECTONICS**  
**A+B+A**  
**anal. basis and phrase.**

**THEMES**  
**TREATMENT**

**FIT**  
**VNITY**  
**VARIETY**

**OPUS** (FIVE - FIFTY ONE HUNDRED)  
**ORGANIZATION**

**NOTATION**  
**OMES**

**SENSE - STRUCTURE**  
**INTAX**  
**QUIND SHAPES**

**SENSIBILITY - SUGGESTION**  
**UNSHIN - SHADOW**  
**TIMULATE - FORM**

**REACTION**

**EXPRESSION**  
**EMPATHY**

**CONTENT**  
**HARM**

**DEALS** (GOOD TYPE BEAUTIFUL)

**AFFECTATIONS**  
**ESTHESIA**

**THEORIA**  
**QUCH**

**INTERPRETATION**  
**MAGINATION**

**ORCHESTRATION**

**VANCE** (AGOGICS RHYTHM DYNAMICS)

**SCHOOL - STYLES**  
**CORES**  
**GLD - SVITE - SYMPHONY**

**RACES**  
**RELIGIONS**

**EVOLUTION**  
**FRAS - EVROPE**

**COMPOSITIONS**  
**COMPOSERS**

**INDIVIDUALITY**  
**DIOMS**

**ASIA - EURASIA**  
**AFRICA**  
**MERICA**

**TITLES**  
**OMES**

**INTERNATIONALISM**

**PERA**  
**ORCHESTRA - OVERTURE**  
**RATORD - ORGAN etc.**

**NATIONALISM**

**CLASSIC - MOZART**  
**EPIC - BEETHOVEN**  
**LYRIC - SCHUBERT**  
**NEO-CLASSIC - BRAHMS**  
**MYSTIC - FRANCK**  
**REALISTIC - TCHAIKOWSKY**

**FORM**  
**SUPERIOR**  
**SMALL**

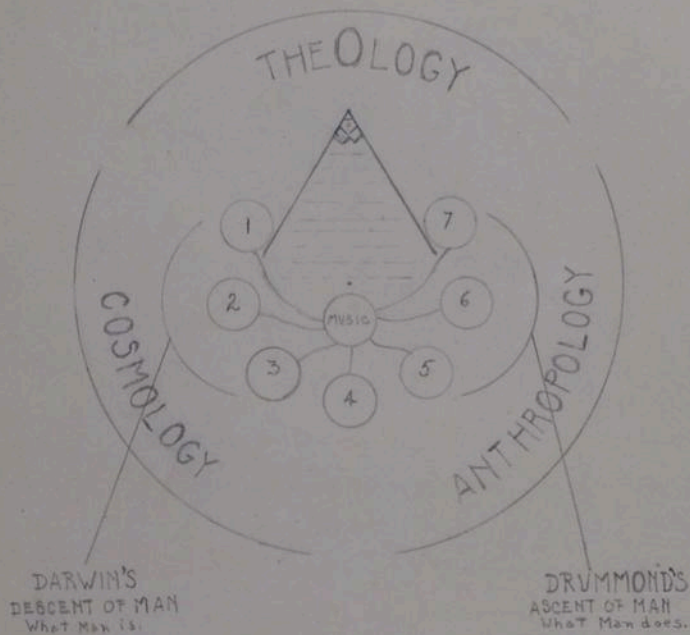
**SONATA ALLEGRO**  
**RONDO**  
**THEME VARIATIONS**  
**FUGUE (etc.)**  
**DANCE + TRIO**  
**ARIA** (A+B+A) (DO)  
**HOMN - FOLK** (SING DANCE)  
**CHANT**

**ONATA**  
**TRING QUARTET**  
**EPT-SEXTET-TRIO-ETC.**  
**YMPHONY**  
**OLO CONCERTO**  
**YMPHONIC POEM**  
**YMPHONIC SVITE**

**BACH - HANDEL - HAYDN**

**CLASSIC - MOZART**  
**EPIC - BEETHOVEN**  
**LYRIC - SCHUBERT**  
**NEO-CLASSIC - BRAHMS**  
**MYSTIC - FRANCK**  
**REALISTIC - TCHAIKOWSKY**





1. Physical sphere.

Harmony of spheres.

Chemistry enables us to understand material world.

Light, color.

Electricity

Acoustics Foundation of musical art.

Mechanics tools, instruments (tone).

2. Metals

Geography. (Music affected by climates.)

Botany. (gives us different types of woods).

3. Ontogeny - Human embryos. (man built out of single cell).

Anatomy. Conformation to physical laws.

Gives us principles of structure.

Gravitation - 1st law of order.

Balance - Law of musical composition.

Symmetry - proportion.

Highest beauty in the human figure.

Anatomical study - analysis

Physiology studies uses of organs.

Anthropometry - Study of form and color among races. Some study of tones in music.

|             |       |        |       |      |        |        |      |
|-------------|-------|--------|-------|------|--------|--------|------|
| Scale tones | 1     | 2      | 3     | 4    | 5      | 6      | 7    |
|             | white | orange | green | blue | yellow | purple | red. |

Anthropotaxis - classifications of men.  
Phylogeny - Races of men.  
Psycho-Physics.

4. All these necessary to art.  
Conscience.

5. —

6. Technology - Utilitarian.  
Phylo-logy - Languages.  
Values - emotions.  
Sociology - Women important in  
primitive races.

## In the Beginning.

Everything  
began in  
the heavens.

See back of  
chirchert.

Earth not  
even a speck  
in heavens.

"The earth on which we live is a spinning globe." All about it for infinite and unfathomable distances is space which is for the most part empty. There are at intervals in this space great flaming bodies called fixed stars. Our sun is one of these. However this one is comparatively near to us, all the others being at incomprehensible distances. There are also scattered about in this space whirls and clouds of shining vapor called nebulae and puffs of luminous vapor and dust called comets. Also near the sun are certain shining bodies of matter similar to the earth, varying in size, called planets.

The diameter of the earth is 8000 miles while that of the sun is 866,000 miles. The surface of the earth is rough. The raised portions form mountains and in the depressions water has collected into seas and oceans. However the deepest oceans are only about five miles deep and the volume of water on the earth is small in comparison with the volume of the earth.

"A summary of the first two chapters of Wells' *Outline of History*"

Harmony of the spheres beginning of all  
rhythm and harmony. For this reason  
astronomy is important to musicians.  
Musicians should understand stars from  
emotional and intellectual standpoint.

Religious  
and Immortal  
Number 7  
played a large  
part in  
constellations.

The Ancients put their religions in the  
heavens. They divided the stars into con-  
stellations or groups and gave them a religious  
significance.

The musical constellation is Lyra, the  
principal star of which is Vega.

#### CREATION

My fellow man's a curious cuss  
and feign would know why things  
are thus; forever asking what is  
what, his mental eye is never shut.  
In these rude rhymes that look like  
prose, I've told how human life  
arose, elucidated unto you, some  
facts that Bryan never knew. This  
good old world, the best of topics,  
I now explain from poles to tropics.  
The nebular hypothesis is useful for  
a job like this. When back, far  
back, our vision passes, we find a  
universe of gases. Although that  
gas was hot and fizzy, at first it was  
not whirling dizzy, but as the mix-  
ture cooled we think, it probably  
began to shrink. Uneven shrinking

caused rotation until she spun like  
all creation. The earth began her  
course to run, and sisters planets  
one by one were thrown off from  
the central sun. Still does our  
earth, though seeming quiet, show  
traces of her early riot. The crust  
has central fires to move it, our  
earthquakes and volcanoes prove it.  
And, like the earth, our souls have  
sprung from something old but ever  
young, planets of God that, every  
one, revolve around a parent sun.  
However thick the crust of sin,  
some primal fire still burns within,  
and evermore upon us beat eternal  
floods of light and heat. until this  
stubborn soil of ours is blessed at  
last with fruit and flowers.

—Bob Adams

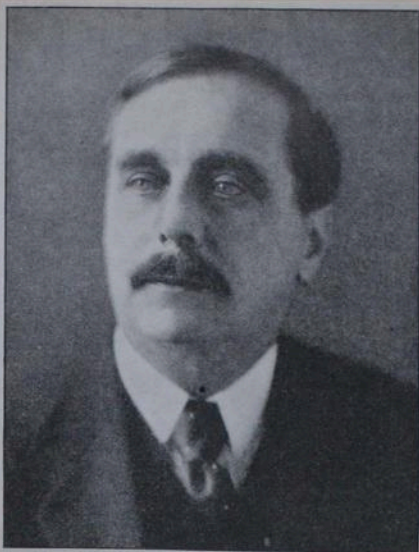
Completely encircling the earth is a thin film of air called the atmosphere. This is most dense in the lower regions. Above five miles from the earth life is supported only with difficulty because of the extreme cold and rarity of the atmosphere. Only in the crust of the earth, the waters of the earth and the lower regions of the atmosphere does life exist.

It is supposed that the sun was formerly larger and hotter than today and that in the course of time it flung off certain portions of itself which are now the planets, our earth being one of them. It is also supposed that the speed of the sun and planets and the heat of the sun are diminishing. It was in the time of much shorter days and much warmer weather that life on this earth began.

The origin of life is still a mystery. However it is generally conceded that life began in the water and that the first life was small and soft leaving no traces of its existence. At that time, it is believed, the earth above water was completely barren and void. Also at that

Phenomenon of Radium Has Given  
New Weight to Theory Which  
Was Advanced Years Ago.

It is an old question, "Are the seventy-odd chemical elements really elementary, or are they compounded of something still more elementary?" In the light of the discoveries of the last few years about radium one authority recurs to a theory, advocated by him many years ago, that as the planets were evolved out of the original nebula which gave birth to the solar system the chemical elements themselves were also evolved out of something far less complex than themselves. The fact that existing nebulae are very simple in composition, while stars in various stages of development exhibit more and more complexity, until in solidified bodies like the earth, a great number of chemical elements with a myriad of compounds are found, is regarded as strongly supporting this theory. The phenomenon of radium leads to the additional suggestion that as in the development of the heavenly bodies we seem to see the growth of the elements, so in radioactivity we witness their decay.—New York Herald.



Copyrighted by Harris & Ewing, Washington, D. C.

THE JOURNALISTIC WELLS.

time the atmosphere was much denser than now.

The first rocks were formed by a cooling of the earth's surface. Above these other rocks were formed of particles of these first rocks collected by the rains which almost continually fell upon the earth. These are called Sedimentary rocks.

Altho the Sedimentary rocks contain no certain signs of life at the period of their formation some geologists believe the graphite and red and black oxide of iron found in them indicate that life existed at that time. These rocks are called the Azoic or Archaeozoic. Above these are the Proterozoic which do contain evidences of forms of life such as simple plants called algae. Above these rocks are the Palaeozoic which contain fossils of shellfish, crabs, etc. This life was except for size similar to the microscopic life found in summer ditch water of today.

Between the Lower Palaeozoic rocks and those of the present time are three classes each showing an increase in the variety of life. There are first the Upper

Palaeozoic rocks. Above these are the Mesozoic containing many fossils of reptiles and the birds. And above these are the Cainozoic, an unfinished stratum which will someday contain the evidences of present day life.

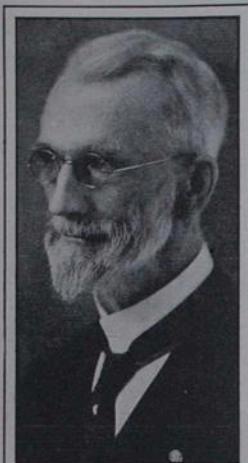
All this vast rock formation furnishes science with the only record of prehistoric times. This record is called the Record of the Rocks. and it is only very recently that man has learned to read it at all.

Of the age of the world nothing definite can be said. The first rocks are stated as being from 1,600,000,000 years old to 25,000,000. However geologists agree that more than one half of geological time had elapsed before life reached the level of the Later Palaeozoic Period.

# RELIGION-AND-SOCIAL-SERVICE

## SHALL MOSES OR DARWIN RULE MINNESOTA SCHOOLS?

**O**LD-TIME RELIGION seems good enough for a majority of Protestant ministers in Minnesota, to judge by the replies to a questionnaire sent out by THE LITERARY DIGEST asking their attitude on the proposal to bar



ONE OF THE "SANE PEOPLE"

So admits the Rev. G. E. Smith, who says he regards Mr. Bryan no sounder on evolution than he was on finance.

the teaching of evolution in tax-supported schools in that State, while a strong minority vigorously protests against the "canned dogma," "perambulator theories," and childish conceptions of the "theological doctrinaires," and asserts that its faith is no whit impaired by belief in the theory of evolution. The question put to the Minnesota ministers by THE DIGEST was: Is the theory of evolution unsound, and should it be barred from our educational courses? The replies were 115 to 77 against the teaching of evolution, the vote by denominations being, against: Lutheran, 62; Evangelical, 13; Methodist, 8; Baptist, 7; Presbyterian, 7; Congregational, 4; Disciples, 3; Seventh Day Adventist, 3; Episcopal, 1; miscellaneous, 7; for: Metho-

dist, 17; Congregational, 16; Episcopal, 9; Presbyterian, 8; Lutheran, 6; Disciples, 5; Baptist, 3; Unitarian, 3; Universalist, 2; Friends, 1; miscellaneous, 7.

The battle between the "liberals" and the Fundamentalists is on in Minnesota, as it was some months ago in Kentucky, and pressages, we are told, a general fight all along the line between those who "fly in the face of God" by accepting the theory of evolution and those who take their geology and biology as well as their religion from the Bible. When the issue was presented in the Kentucky Legislature in the form of a bill forbidding the teaching of evolution in State schools the anti-evolutionists lost by the narrow margin of one vote, and recent dispatches indicate that the battle is to be preat again, under Baptist generalship.

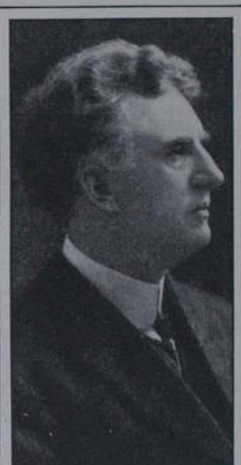
In both instances the anti-evolutionists were inspired to action by W. J. Bryan, who has become the lay leader in a powerful movement to restore, where it has lost ground, belief in the literal inerrancy of the Bible. Hardly had the smoke of skirmish in Kentucky cleared away than Mr. Bryan marshaled his forces together again and invaded Minnesota, where his persuasive eloquence fired a body of ministers in St. Paul to condemn evolution as "a program of infidelity masquerading under the name of science," and to adopt resolutions urging that "Christians throughout the State appeal to the legislature to eliminate from all tax-supported schools this anti-scientific and anti-scriptural theory of the origin of man and the universe." Christians must choose between Moses and Darwin, since evolution relegates the

truth of salvation to the limbo of medieval delusions, asserts a stalwart opponent of evolution, while, on the other hand, it makes no difference to the faith of a Modernist whether God worked a moment, a month, or through eons to fashion the universe and to create man after His own image. In the latter view the long process of evolution is no less a miracle than the short out of a "surgical operation."

The whole matter is nothing more than a tempest in a teapot, a small teapot at that, in the opinion of some of our ministerial correspondents; but there is a large body of other opinion which spots in the various agitations here and there the beginnings of a concerted movement to assert everywhere the literal inerrancy of the Bible and to condemn as heretical all those who hold that revelation was not finished on Patmos. Instead of taking potshots at a few big luminous targets, such as Dr. Harry Emerson Fosdick, a barrage is to be laid down on the whole school of evolutionists. While some of the antis are not opposed to the teaching of evolution as a theory, they do object to having it taught in the lower grades, on the ground that it often leads children to a naturalistic conception of the origin of man and the universe and causes them to laugh at the Bible as a book long gone out of date. The Modernists, on the other hand, hold that evolution strengthens faith and that it may be logically regarded as one of the mysterious ways in which God moves His wonders to perform. The question, we have been warned, may resolve itself into a dispute which will rend the Christian Church more than it was sundered in the days of the Reformation, and THE DIGEST's poll of Minnesota pastors may be taken as generally indicative of the two views in which the theory of evolution is held.

The controversy between so-called Fundamentalists and Modernists is "much ado about nothing," in the opinion of the Rev. William E. Dudley, a Congregationalist minister of Minneapolis, who says that there is a large representation in his part of the Northwest of "the type of dogmatist who sees no further than the nose upon his face. His business is to damn everybody who dares to think otherwise than he himself thinks." Mr. Dudley views the rumpus as "simply a passing phase in our already over-complex civilization," and argues that how God brought about His creation is immaterial. "The supreme fact is that 'Behind the dim unknown standeth God within the shadow.'" And as to teaching evolution in the schools:

"Why not? Presented as an hypothesis, it is legitimate. We



SCOFFING AT EVOLUTION.

The Rev. W. B. Riley, Mr. Bryan's host in Minneapolis, says evolution "has no place in State schools."

have theories for newly discovered lands, and conjectures for electrical forces. The more we know the more baffled we become. Our highest wisdom is a poor guess, yet through these uncertain guesses we struggle toward the best that is yet to be.

"The fact remains the human mind is so constituted that the human race will continue along the lines of adventurous investigation. The dogmatists may say the thing is settled. They may attempt to force the revelations of science beyond the curricula of the schools. Their task is hopeless and the roar is but 'an infant crying in the night.' The world is growing up and we must discard our perambulator theories for honest grown-up convictions based upon sincere attempts to satisfy reason.

"Truth is immovable and triumphant. God will not damn us for thinking for ourselves. The biggest hoax in the world is canned dogma. Every storm spends its strength. The present controversy indicates that our garments are still thick with prehistoric mud, for, 'It doth not yet appear what we shall be.'"

"The Gospel and evolution are both revelations of God's will," asserts the Rev. Warren L. Bunker, another Minneapolis Congregationalist, who studies

the Bible "as the book of religion, not as a book of science," and is more concerned "over destinies than origins." He does not "presume to stand before the gates of the Kingdom with authority to exclude all or any who believe that evolution is the method by which God works," and does not believe in barring evolution from the schools. Proceeding with Congregationalist opinion which views the study of evolution without misgiving, the Rev. J. G. Duling, also of Minneapolis, thinks that "Mr. Bryan is doing more harm to the cause of Christianity than any man before the public to-day. His ability as a speaker and his large following among the masses make people think him an authority on the subject," whereas "the facts are that Mr. Bryan has never been an authority on any subject." The effect of his oratory is to arouse "prejudice against educated people," and to engender the belief that if you want to be a true Christian, "remain ignorant." So, believing in "teaching the facts," this preacher is "in favor of teaching evolution in the public schools." Less critical of his more orthodox brethren, the Rev. Charles L. Mears, of Minneapolis, believes that the Fundamental movement in Minnesota does not represent the spirit of the large part of the Protestant forces in Minnesota, "but comes from a comparatively small group of devout people who have lost all sympathy with the modern Church and school." With this opinion several other Congregationalists fall in line. The Rev. Alvin C. Bacon, of Little Falls, writes that among Congregationalists "only one or two men of meager training are concerned" with the Fundamental movement, adding:

"The Congregational Church of Minnesota is thoroughly liberal and progressive and I think this is true of the great body of Minnesotans generally. I do not expect that this is going to become a live religious issue in this State. . . .

"I have not the slightest fear that the teaching of evolution will be barred from the schools and colleges of Minnesota. To

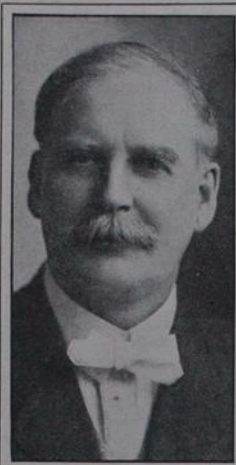
do so would be to step back into medievalism and bar the way to truth and knowledge."

On the part of "sane people," writes the Rev. G. E. Smith, of Minneapolis, Mr. Bryan is regarded as "about as sound on realities of evolution, as sound on the principles of Christianity, as he was, a while since, sound on finance. The elimination of the study of evolution from our public schools is in no way the sentiment of Minneapolis or of the State of Minnesota." Instead of injuring it, "the effect of the anti-evolutionary agitation upon students is to shake their faith," believes the Rev. Russell Henry Stafford, of the same city, declaring that "by actual experiments in the laboratory they know that the scientific method in general is self-validating; and when men in the name of religion denounce that method and its assured results they are constrained by the truth that is in them to reject religion as thus represented." The Christian interpretation of life, says this pastor, "is neither weakened nor strengthened by science in any form, for it rests upon supersensible sanctions, the chief of which are the moral sense and the mystical experience of God." And to the Rev. Frank J. Bruno, who is now at the University of Minnesota, the agitation against the theory of evolution seems "about as valuable as entering the field against windmills," for the theory "will stand or fall on its own merits. Its accuracy is to be tested by the canons of scientific criticism and not by the emotional appeals of a church or a group of churchmen." And so far as this correspondent has observed, "the result of this agitation among the students at the University promises to establish both the religious faith and the evolution hypothesis on firmer and broader grounds. It has stirred up the thinking of students on these two subjects. If pursued long enough and honestly enough such thinking can only end in a better religion and a better science." In the opinion of the Rev. George H. Kemp, Minneapolis, the agitation against teaching

the evolutionary theory "is the revival in another form of the contest between theology and science, and the former has always had to retire." He quotes Professor Conklin: "If evolution is false, it can not be saved by science; if it is true, it can not be destroyed by theology."

Seventeen Methodist preachers are numbered in our replies among the "religious progressives." Christ himself was unorthodox and radical in his views, and was a sacrificial victim to the orthodoxy of his times, argues one of the Methodist liberals. Even in those days there were Fundamentalists—the Scribes and the Pharisees—who made much of the letter of the law. Therefore, writes the Rev. Jesse Kenderdine, of Wells, "we may reasonably contend that the attitude of Jesus to the teachings of the Old Testament is a safe guide to all Christian people. His attitude to it as a guide for ethical thinking and moral conduct was this: It is insufficient." Some of the "old-time"

(Continued on page 50)



STICKING TO GENESIS.

The Rev. George T. Rygh says the statements of evolutionists are "the poison gas of infidelity."



LET US KEEP THE BIBLE.

Urges the Rev. August Samuelson, who says Christianity has stood the test for almost 2,000 years.

moral relationships were declared by him to be inadequately dealt with, and, argues Mr. Kenderdine:

"This freedom of mind which Jesus displayed has become in large measure the characteristic of all Christian peoples and shows itself conspicuously in education. Why, then, should it be regarded as an unchristian thing for men who inherit this large freedom of thought from the influence of the spirit of Christ in the world to say that the biological outlook 'of old time' is inadequate. The processes by which God brought His creatures into being are larger processes than their 'of old time' dreamed. Does it discredit them any more for scientists to announce that the biological outlook of the Old Testament was narrow and inadequate than it does for Jesus to say that the moral and spiritual understanding of the Old Testament fell far short and must be superseded? If the righteousness of the Scribes and Pharisees, based on a meticulous observance of Old Testament laws, must be exceeded in order to enter the Kingdom of Heaven, shall it be considered a heresy to contend that the biological teaching of the Old Testament must be exceeded? If the ceremonies of the law may righteously be considered but a shadow of things to come, shall it be unrighteous to consider that the creation story is but a shadow of knowledge to come?"

"Let us have sense and see that to put our nervous hands on the Ark is sure death not only to learning but also to spiritual progress. Refrain from these men, and let them alone: for if this counsel or this work be of men, it will be overthrown: but if it is of God, ye will not be able to overthrow them, lest haply ye be found even to be fighting against God."

And the effort of the "well-meaning but retarded souls" who are seeking legislation against the teaching of evolution is just as futile, believes the Rev. Herbert A. Sawyer, another Methodist liberal, as the endeavor of Mr. Voliva of Zion City to persuade men that the world is flat. Indeed, says Mr. Sawyer, who is a pastor, of Virginia (Minn.), the positions of Voliva and these other "backward" souls are almost analogous, "for if the Bible is a book of science and inerrant in this respect, I can not conceive how the anti-evolutionists accept even the Copernican theory." But he thinks that between the two schools Voliva is the more consistent, and goes on:

"Must men forever batter their heads into a state of unconsciousness against the laws ordained of God when there is so much more important and worth-while work to do?"

"It is impossible to square the scientific conceptions of the Bible with much of the scientific truth ascertained to-day. It is in the interest of the youth, who are bound to meet this problem, that their faith in God and the Christian faith must not be jeopardized by those who would compel them to believe in a Bible scientifically inerrant."

"As for the writer, the God who uses the evolutionary method in the continual

process of creation is immeasurably more worthy of all honor, devotion and love than the God that is worshiped by the anti-evolutionists."

If we barred the evolutionary theory from the schools, says the Rev. James I. Asher, of St. Paul, then, to be consistent, geology, astronomy, and even the history of mankind would have to go. But "there is nothing to fear from the truth. It will make men free. It is no longer heresy to believe that the earth is round." "There is no conflict between real science and true religion," writes the Rev. H. H. Frost, Minneapolis, "and there never can be." "What an everlasting disgrace it would be for us to legislate such teaching out of our schools," exclaims the Rev. Lewis L. Dunnington, another Minneapolis pastor. "Truth can not be legislated out of existence. Experience has shown that when misled men have resorted to such measures to put down ideas which they do not happen to agree with, the very opposite effect has been achieved. Truth always wins in the end." And if the State Legislature should think that Darwinism is a heresy and should suppress its teaching in the public schools in 1922 and the next Legislature should do the same thing with some other scientific theory, and the following Legislature should repeal both enactments, asks the Rev. J. S. Hoagland, recently of Minneapolis and now of Milwaukee, Wis., "how would the cause of truth be helped?" The attempt is "unwarranted interference with the freedom of teaching," declares the Rev. Lucius H. Bugbee, Minneapolis, and, if successful, "would mean a step backward toward arbitrary ecclesiastical control of human opinion. I do not believe that the good sense of Minnesota would permit it."

But it seems pathetic that the famous controversy between Huxley and Bishop Wilberforce in 1850 should require to be rehearsed in the year of our Lord 1922, writes the Rev. W. P. Lemon, of Minneapolis, one of eight Presbyterian preachers who do not "tremble for the safety of the ark of God" because of the currency of the evolutionary hypothesis. The Bible was written, he says, "to tell us 'not how the heavens go, but how to go to heaven,'" and he regards any attempt to interfere with the teaching of evolution in schools and colleges as "misplaced energy which might well be expended to prove that the realities of the Bible are as demonstrable as are the realities of the book of Nature." By a little clever propaganda it is possible to stage a demonstration against almost anything under the sun, declares the Rev. Henry Daniel Funk, a St. Paul Presbyterian, reminding us that "only too often the majority has been mistaken concerning questions of religion, science and politics. *Vox populi*, alas, is not always *vox Dei*, but frequently an expression of fanaticism, and sometimes it is *vox diaboli*." In short, he writes:

"I believe God is the creator of man; whether this human being evolved from the hand of God instantaneously, within twenty-four hours, an eight-hour day, or a million years, I do not know. But I believe that if it be of God, it can not overthrow the word of God. It will come to naught."

subject," as the Rev. Elmer N. Schmuck, of Minneapolis, puts it. "If an attempt is made to drag the matter into legislation," he writes, "there are enough lovers of freedom of thought that will make their influence felt against any such action. Moreover, ridicule of the theory of evolution indulged in by popular political lecturers and others can not take the place of solid argument in meeting the issue." Something more than "unchristian narrowness of thought and ridicule," he thinks, "is needed in the debate between the two theories. Science and religion are not incompatible; they are the expression of the human mind in two different spheres. If we instruct our youth in a firm belief in God, regardless of any theory of creation, they will not lose their faith." "We can not and would not set the clock back; to fight once more the battles of Huxley's day, or Galileo's," writes the Rev. Phillips E. Osgood, another Minneapolis Episcopalian who thinks that "the movement to ban the teaching of evolution from public schools would be a dangerous precedent." The next thing, he says, "might be the banning of teaching that the world is round, that astronomy tells truths, that gravity is a natural law, that polygamy is wrong, that slavery is mistaken. Proof texts could be cited for each denial. The Church's warfare with science is over, despite this revival of anti-science. And science is recognized as 'the handmaid of faith' by all the modern-minded 'faithful.' 'Truth is mighty and will prevail.' Episcopals, writes the Rev. Edward M. Cross, of St. Paul, are "almost universally opposed to any plan interfering with full liberty in the teaching of the sciences in our public institutions of learning, altho we do deplore the fact that science is frequently taught with many of the unwarrantable assumptions of doctrinaire materialism. It is this which has aroused the churches and against this that the larger part of the present revolt is directed." It is true, seconds the Rev. George J. Childs, also of St. Paul, that "our education is warped to materialism, and lowered morals are telling the cost. It can never be full-rounded until it respects the needs of, and develops, the whole man—body, soul and spirit." But "to ban from schools the presentation of any current theory in science would be ill-advised. Indeed, it would be medieval and futile."

The sixty-two Lutheran pastors reply to our questionnaire that they believe the theory of evolution to be scientifically unsound and scripturally untrue, six dissent far enough to believe that instruction in scientific theories should proceed without interference. While he believes the theory to be "an attempt on the part of materialists, atheists and rationalists to rule God and the supernatural out of the universe and account for everything in existence on a purely naturalistic and rationalistic basis," the Rev. G. M. Bruce, professor of Ethics and Sociology at the Luther Theological Seminary, St. Paul, adds: "Yet I do not believe in placing a legal ban upon its teaching in our tax-supported schools, because intellectual and spiritual battles should be fought with other weapons than the sword of the State."

Any instruction in the theory of evolution which leads to the conception that there is an absolute controversy between Christian doctrine and true evolution,

"have succeeded in making a loud noise, which has impressed those who are afraid to believe the truth, but they have offered no real proof to substantiate their arguments." The subject "calls for light, not laws, for painstaking scholars, not policemen," writes the Rev. Ellison R. Purdy, of the Friends in Minneapolis, "and those who are sincerely opposed to evolution should meet the theory on the field where it has gained the ascendancy, and not on another." Regarding the movement to bar the teaching of evolution from our public schools as "a party, or essentially sectarian, movement," Mr. Purdy is of the opinion that "it has always proved detrimental to the Church to choose the short cut of arbitrary authority rather than the slower method of reason and discussion. . . . As for Christianity, I am convinced that it is a matter of loyalty to Christ and his way of life and inward experience of his spiritual presence, and makes for a better world in the future, whatever the cosmological program of the past."

But the evolutionary theory and all its corollaries are subtle devices of the devil to entice the unwary away from God in the opinion of most of the Fundamentalists clergy, tho a few of the passages are less violently contentious.

"We have nothing against teaching evolution in a historical sense," writes the Rev. Henry Hartig of Minneapolis, one of sixty-two Lutheran pastors who would shut the schoolhouse door against the theory of evolution, "but we protest against the arrogance of certain scientists who condemn everybody who can not see through their eyes, also some of the most illustrious of the world's scientists are anti-evolutionists." In Mr. Hartig's opinion "it takes very much more faith to believe the theory of evolution than to believe in the inspired chapter of Genesis I." If taught in the schools at all, writes Professor J. L. Nydahl, of Augsburg Seminary, Minneapolis, evolution "should be presented as a theory simply, and not as an established fact or a verified natural law." Personally, Professor Nydahl does not consider the principle of evolution to be absolutely against the teachings of the Bible: "the story of creation as told in the first chapter of Genesis shows evolution. But when atheistic scientists and rationalistic teachers attempt to explain the origin and development of things by eliminating God, then I protest not only as a Christian, but also as an American citizen." But vigorous rejection of evolution even as a scientific hypothesis comes from the Rev. August Samuelson, of Brainerd, who, feeling strongly on the subject, writes:

"Christianity has stood the test for almost two thousand years. It has stood the test of persecution, fire, prison, torture and what not, and still it is growing and the spirit in man hungers for the truths of Christianity. Furthermore, Christianity can count its martyrs by the millions. Let these so-called scientists who sit in a soft leather couch and smoke a cigar or ride a five-thousand-dollar car, who spend their nights at banquets and a few hours in the daytime trying to make their brains find some method by which they can make people believe that two times two is three, show some proof. When these dreams

## SHALL MOSES OR DARWIN RULE MINNESOTA SCHOOLS—Continued

academic freedom at our universities, where the theory is spoken of, let it be emphasized that it is only a theory, not proven fact. And with it teach the history of science, which will show that such theories are held true to-day, and to-morrow may be discarded. As an example might be mentioned that at one of eighty different evolutionary theories were before the French Academy of Science, all of which are discarded to-day."

The "supercilious attitude" of many so-called "scientists is complained of by the Rev. C. S. Thorpe, also a Minneapolis Lutheran, who says that the pseudo generators of theories look upon criticism of them as clear symptoms of bigotry. In reality, says this pastor, "bigotry is not confined to Christians when it comes to assuming an attitude in this matter. Christians have, as a matter of fact, been too tolerant." Another Lutheran pastor who thanks us for the opportunity of voicing his protest against evolution, the Rev. Emil Lehne, of St. Paul, declares: "Evolution is the mightiest weapon infidelity ever used against Christianity." "What a wonderful doctrine it is," exclaims the Rev. Emil Lund, of Minneapolis, thus jests at it:

"Think of our progenitors as quadrupeds in dirty pools, or as hideous worms creeping in the dust, or as fishes playing in the lakes, or as moles digging in the earth, or as chirping birds in their nests, or squirrels jumping from branch to branch, or cracking nuts and acorns, or as ten hairy baboons, and orang-utans, wagging friendly with their long tails, fiercely fighting with claws and teeth. Think of those, our progenitors, gradually advancing and increasing as regards intellectual powers by 'natural selection, imitation and experience! Is it not exceedingly exhilarating doctrine? maybe, the contrary? Yes, indeed, contrary. . . ."

"The clear, pure, powerful and blessed doctrine of our Bible is the only means of salvation and therefore the very means of education. It makes people, old and young, pure, strong, happy and beautiful; it endows them with power, gain victory over flesh and world, temptations and evil lusts; it makes them conquerors; the doctrine of Darwinism makes them slaves."

But the Rev. George Hanssler's opinion is that "scientists should be encouraged to find out all they possibly can," tho "they should learn to be chaste and moderate their assertions, and not label their fine as 'established facts' and use them in a way which will discredit the Bible and shake young people in their faith." "Time, goes on this St. Paul pastor, "will tell the truth."

have been given the acid test for two thousand years and have two million martyrs on their roll and still going on victorious in spite of everything that is thrown in its way—then we are ready to sit up and take notice.

"If the Bible stands for anything, let us keep it. If the Bible is meaningless, let us throw it away. Let us tear down our temples and do away with every sacred institution (that is founded on the Bible), and let people grope in darkness for a while, and we shall soon know where we want to stand, with the scientist or the disciples of Jesus. We have no right to keep this matter out of the press, by force or resolutions, but as taxpayers and American citizens we have a right to keep it out of our public schools and it should be kept out of our public schools at least till every taxpayer has had his say."

One Lutheran pastor—the Rev. S. T. Normann, of St. Paul, cites the complaint of a father that since he had entered high school his daughter "no longer had any use for the Bible." The teacher replied to the complaint: "Well, we are teaching her the truth; the Bible does not." And this, says Mr. Normann, "is the tendency more and more. So evolution really is irreligion, agnosticism. Why should we as taxpayers be forced to support such doctrines which take from our children their faith in the Bible?" Advancing the theory that the teaching of evolution really comes under the constitutional prohibition of the teaching of religion in the schools, Professor C. A. D. Freseman, who has moved from St. Paul to Baltimore, says: "The Church contends, and properly so, that if positive and demonstrated Christian truth dare not be taught, then it is the sense of the Constitution that negative religion, irreligion, dare not be taught, even tho it parade under the name of science, a science, however, undemonstrated and undemonstrable." Intellectual flapperism characterizes some of the teachers of evolution, writes the Rev. H. J. Habel, of Minneapolis. In very many instances, he says, the teachers use evolution as a cloak from which to attack and ridicule the Bible. "Especially harmful is the class of high-school teachers who have recently graduated from some college where they swallowed a pound of predigested book knowledge together with a ton of athletics and other college activities, and who try to impress the class with statements to the effect that every intelligent person now accepts the theory of evolution." Many of these instructors, we are told, have no convictions of their own, but, like the flappers, are merely following the crowd. And, writes Mr. Habel:

"It happened not so very long ago in a State university where a young girl of my congregation attended, that the teacher, after having deliberately tried to ridicule the Bible, said to the students: 'If any of you still believe in the old fables, please hold up the hand.' Two or three out of the class held the hand."

The Largest Manufacturer and Distributor of California Redwood

**Redwood**  
Lumber Co.  
The Largest Manufacturer and Distributor of California Redwood

## SCIENCE NO REFUTATION OF RELIGION

THO RELIGION CAN NOT BE MEASURED in watts or volts, nor be traced to any finite cycle, it is not necessarily incompatible with science, but a different and unrelated activity of the human mind, holds that "electrical wizard," Dr. Charles P. Steinmetz, consulting engineer of the General Electric Company. Faith, he says, is the foundation of religion, and faith is beyond the power of science to analyze. Coming, as they do, from a preeminent scientist and investigator, these words are widely quoted in the daily press, with the assurance that they will bring comfort to those laymen who fear that a study of science as it is taught today invariably leads to atheism. They are from an address on "The Place of Religion in Modern Scientific Civilization," delivered in a Unitarian church in Schenectady, N. Y., in which Dr. Steinmetz declares that there is no scientific foundation for religion, for the idea of God, or for the idea of immortality. All these conceptions, he holds, must rest on faith, on a faith which transcends the limits of science and research and goes beyond perceptive experience. The negative answer of science, he says, is not conclusive on the question of infinity in time and space, immortality and God, and the question is still "as open as it ever was."

Religion, as defined by Dr. Steinmetz, deals with the relations of man to superior entities, usually conceived as individuals; that is, a personal God or personal gods. Science, on the other hand, deals with the conclusions derived by the laws of logic from our sense perception. He goes on, as we quote from press reports of the address:

"Our knowledge of the superior entities with which historic religion deals has been derived by experience and by 'revelation.' Undoubtedly experience led to the first conception of superior beings, or 'gods'; the forces of nature personified; the experiences in dreams; the orderly progress of nature, which seemed to imply a manager of the universe.

"With our increasing knowledge this became less and less satisfactory. For instance, the terror of the thunderstorm led primitive man to the conception of a supreme being whose attribute was the thunderbolt. But when Franklin brought the lightning from the clouds and showed it to be a mere electric spark—when we learned to make the lightning harmless by the lightning-rod, and when, finally, we harnessed electricity to do our work, naturally our reverence for the thrower of the thunderbolt decayed. So the gods of experience vanished."

The conceptions of physical science are incompatible with the metaphysical conceptions of God, immortality and infinity, continues the great electrician, but, he asks, "are the conceptions of science really final and all-embracing, or are they limited also, holding within a certain range only, and not beyond this?"

The answer is that science derives its conclusions by the laws of logic from the things we see, and does not deal with the real world, of which we know nothing, but with the world as it appears to our senses. But, Dr. Steinmetz asks again, "are there no limitations to our sense perceptions, which limit the validity of the conclusions we derive from them?"

"All of our sense perceptions are limited by and attached to the conceptions of time and space. Kant, the greatest and most critical of all philosophers, denies that time and space are the product of experience, but shows them to be categories—conceptions in which our mind clothes the sense perceptions. Modern physics has come to the same conclusion in the relativity theory, that absolute space and absolute time have no existence, but time and space exist only as far as things or events fill them, that is, are forms of sense perception.

"Still greater and more pertinent is another limitation of our sense perceptions; our senses can perceive only finite things, but can not perceive the infinite. No reasoning from any foundation can put anything into the conclusions which is not contained in the foundations, and thus, with our sense perceptions finite, all conclusions

from them, that is, the entire structure of science, is limited to the finite. Hence any attempt of science to deal with an infinite conception, as the infinite in time and in space, immortality, the conception of God, etc., must fail and lead to contradictions, be illogical.

"Thus the proof of the non-existence in science, of the conception of God, immortality, etc., really means nothing except that we can not get by reasoning a conclusion which is not contained in the premises on which we started our reasoning.

"Furthermore, science derives its conclusions from the sense perceptions by the laws of logic. But what proof is there of the correctness of the laws of logic, except experience, which, no matter how comprehensive, always must remain limited?

"Thus the negative answer of science on the question whether there are conceptions of infinite character, as infinity in time and space, immortality of the ego, God, etc., is not conclusive.

"There can be no scientific foundation of religion, but belief must always remain the foundation of religion, while that of science is logical reasoning from facts, that is, sense perceptions, and all that we can say is that the two, science and religion, are



Copyrighted by Paul Thompson.

FAITH BEGINS WHERE SCIENCE ENDS.

Says Dr. Charles P. Steinmetz, the famous electrical engineer, who holds that science and religion are not incompatible.

not necessarily incompatible, but are different and unrelated activities of the human mind."

And as religion may not question the findings of science, science, on the other hand, observes the *New York Times*, in agreeing with Dr. Steinmetz's reasoning, can not claim to be really final. "It derives its conclusions from limited sense perceptions, which also limit the validity of its conclusions." In other words, "science has not a monopoly of the sources of power helpful to humanity. It is making life easier and more comfortable by utilizing the power that lies to its hand."

"But all this is an empty achievement unless it is supplemented by the power which makes for what is called character—decent and honest living and upward striving. . . . Vice-President Coolidge, a few days ago, emphasized the need of religion, and said that 'the American people are too smart to let such a force die out.' We need pure religion even more than white coal as a source of power."



HE JESTS AT EVOLUTION.

The Rev. Emil Lund laughs at the theory which includes "frogs in dirty pools" in our ancestry.



"TRUTH WILL PREVAIL."

Says the Rev. E. M. Cross, declaring that Episcopallians are generally opposed to interfering with the schools.

## Considers Evolution

### Merely a Brainstorm

Editor, Times-Union:

Evolution is a brainstorm. It is based upon speculation; Cloud finds imagination to make up for the things not seen nor heard. Rudpath declares that it has been "confirmed by speculative thinking; one 'scientist' (Humboldt) complained another who has presented his theory 'free from all processes of demonstration' (Vol. I, p. 38).

Since when, in science, has "imagination" displaced "demonstration"—since classified knowledge has been enlarged to include classified conjecture?

Evolution originated in atheism. Lucretius' philosophy, according to Rudpath, was: "No god, no Creator. Ruler;" and religion "a bane to mankind." "Blindly, and, without design," "no ordering thought," "no will divine," and Huxley agrees. Evolution has no use for God in nature; he offers the silly idea that "the origin of life is a profound mystery, with which science does not concern itself." Afraid he will find a Creator! Its tendency is away from God and the Bible. Preachers who accept it call the story of creation, the atonement, salvation that culminates before the great white throne, a "fairy tale." In favor of "theistic evolution" (see files Times-Union).

A Pittsburgh pastor has discovered a little "angelic germ" in man, suggesting reaching perfection by natural process, instead of by being "born again." Prof. Thomson ("Outlines of Science") says, "Detective, or disturbed development, leaves one sadly impressed with the risk of slipping down the rungs of the steep ladder of evolution." These:

If this germ develops a grade or two below the level, who knows but in the process he becomes a little devil. Him, some evidence here!

Cloud insists "The duty of theology is to re-adjust itself to what science proves. . . . science has no facts to interpret save those which man has gained by experience." The impudence of this is revealed when the theory is probed for evidence. The "interpretation" is fabrication; it is "assumed," "theory," "conjecture," "plausible," "imaginative." (Authority for this.) These and a host of other indefinite terms, form the vocabulary of a "science falsely so called," and without them the "theory" could not be stated. Takes away the guesses, and the it is done for. Its chief object is to destroy faith in the Bible, which it misquotes and defames, with its doctrine of squids and squirts, pollywags, lobsters, monkeys and men. One thing it demonstrates: When a man sets out to make a monkey of himself he does a complete job!

"Professing themselves to be wise, they become fools, and changed the glory of the uncorruptible God into an image made like corruptible man (monkey, for example), and to birds, and to four-footed beasts, and creeping things" (Rom. 1:23). These "creeping things" form the backbone of the theory. Surely, "when they knew God, they glorified him not as God!" Advocates of the theory denounce opponents but never present evidence. It is a godless system, nurtured in infidelity, ignores spiritual verities, worships "blind force," deaf and dumb; it seeks too destroy "the glorious hope of the Gospel of the Son of God," and to put in its place pagan sophistries, human vagaries, a thing of shame, insulting alike to God and man!

Myron M. Adams.

## IS A GORILLA ALMOST A MAN?

"IT IS OF MORE IMPORTANCE to judge the gorilla correctly than any other animal, for he is unquestionably the nearest akin to man." This is the position taken by Carl E. Akeley, the naturalist, in an article which tells of his observations of the gorilla's habits in the mountains of the Lake

They do not, however, put their hands down flat and put their full weight on them. They seem to be evolving toward a two-legged animal. . . .

The gorilla makes no abode, has no clothes, uses no tools, unless grasping a stick may indicate the beginning of such an idea. It is still before the dawn of intelligence with him. Yet scientists tell me that he has the palate and muscles that enable man to talk. The gorilla can not talk, but no one knows how near to it he is, perhaps a very long way. Of course, a parrot can be taught to talk, but a parrot has no brains to speak of, so that his talking is of no significance. But recent studies of the brain of John Daniel seem to place his brain about on a par with that of a two-year-old child. Now a two-year-old child can both talk and think. If the gorilla with his child's brain could learn to use his voice even like a parrot, we should have come very near to having a contemporaneous "missing link."

Of course it does not follow, Mr. Akeley contends, that because a gorilla's palate and muscles are like man's—

He will be able to talk or pass out of the barking or roaring phase. The gorilla has what might be called "roaring pouches" that extend down the side of his neck. It is an interesting fact that there is evidence of these same pouches in man, although they are nearly atrophied from long disuse. It seems, therefore, that even if the gorilla does not learn man's speech, man at one time used the gorilla's roar or one of his own.

On the subject of the gorilla's family habits, Mr. Akeley quotes the German scientist, Eduard Reichenow, who has made extensive studies of the gorilla in the Mikano district: According to Reichenow:



Copyrighted by Carl E. Akeley.

LONG-FACED INDIVIDUALS, ALL FROM ONE DISTRICT.

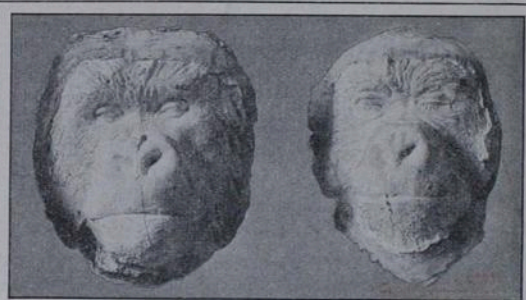
Gorilla skulls, like those of human beings, show much greater variation than is found elsewhere in the animal kingdom. These death-masks, of three specimens shot in the Mount Karasimba region, show similar physiognomies. Compared with the faces shown below, there is as much difference as between widely separated human races.

Kiva region on the eastern border of the Belgian Congo in Central Africa, whither he had gone to gather data and materials for the gorilla exhibit in the famous African Hall of the Museum of Natural History in New York. He writes, in *The World's Work*:

Most scientists agree that man and the gorilla had common, or at any rate, similar ancestors. Since that time man passed through the dawn of intelligence and developed the power to reason and to speak. But how he developed these powers, no one knows. The gorilla has not these powers, but he has so many other likenesses to man that there is no telling how near he is to the dawn of intelligence.

That the gorilla of the family of the apes once lived in trees is attested, Mr. Akeley points out, by "the length, size and strength of his arms" which "came from the tree-climbing habits of his ancestors." But he has come down from the trees to dwell upon the ground as man dwells, and he is putting away his arboreal characteristics to such an extent that even his body is taking more and more the formation of man's. The writer observes that:

The gorilla entered the upright phase, and in this he is the only animal except man that has achieved this distinction. To stand erect and balanced, an animal needs heels. The gorilla has developed a heel. Moreover, just recently the scientists who studied the body of John Daniel, the young captive gorilla that died last year in New York, discovered that, unlike any other animal, the gorilla has the same full complement of foot muscles which enable man to walk upright. The gorillas I saw in Africa usually touched both their feet and hands to the ground in running, but most of the weight was on their feet. Their legs are short, their arms long, and they carry the body at an angle of 45 degrees forward.



Copyrighted by Carl E. Akeley.

THE ROUND-FACED RACE OF MIKANO.

These death-masks show the resemblance between individuals killed in a district not easily accessible from the territory inhabited by the long-headed type shown above.

"The sleeping places of the members of a gorilla company do not lie irregularly near each other, but we find them joined in groups of two, three or four, which lets us clearly recognize that within the herd there exists a division according to families. The nests of a family lie close to each other and are from eight to fifteen meters away from the neighboring group, so that the

various groups seemed closed off from each other by the thick dot of plants, like various dwellings. From the size of the nests we see that always only two of them belong to adult animals; if there are more nests present, these are always smaller and therefore belong to the half-grown young. From this observation we get the noteworthy fact that the gorilla lives in monogamy.

Mr. Akeley observes: "I can not say that my observations corroborate this deduction. In one of the bands I saw there were three adult males. They might under this theory have been the heads of three families. But in the other band there was but one male and several females. The extra females may have been spinster aunts of the family, but on the other hand it might just as well have been a case of polygamy." The American investigator was disappointed in not seeing a gorilla in infancy, and he again quotes Mr. Reichnow:

I was successful on the hunt to capture an animal only a few days old. It weighed only 2 kg. [4½ pounds], therefore considerably less than a new-born human child, while an old gorilla considerably exceeds an outgrown man in weight. The whole body of the little gorilla was sparsely covered with hair so that it appeared almost naked; only on the crown of its head there arose straight up a tuft of long brown hairs. This manner of hair-growth gave the little ape a particularly human appearance.

When one saw the little being which flourished beautifully at the breast of a Negro nurse, in its helplessness, one had to become convinced that the gorilla nursing needs the greatest care and attention on the part of its mother.

One of the adventures of Paul du Chaillu is quoted to show that the gorilla is not so ferocious as is generally believed. In the quotation Mr. Akeley has put in brackets what Du Chaillu felt, leaving outside the brackets what the gorilla actually did. "If you read the tale as Du Chaillu wrote it," he says, "it gives an impression that the gorilla is a terrible animal. If you read merely what the gorilla did, you will see that he did nothing that a domestic dog might not have done under the same circumstances." The Du Chaillu story runs:

Then the underbrush swayed rapidly just ahead, and presently before us stood an immense male gorilla. He had gone through the jungle on his all-fours; but when he saw our party he erected himself and looked us [boldly] in the face. He stood about a dozen yards from us [and was a sight I think never to forget]. Nearly six feet high, with immense body, huge chest, and great muscular arms, with [fiercely glaring] large deep gray eyes [and a hellish expression of face, which seemed to me like some nightmare vision]: thus stood before us this king of the African forests.

He was not afraid of us. He stood there, and beat his breast with his huge fists till it resounded like an immense bass-drum [which is their mode of offering

defiance]; meantime giving vent to roar after roar. . . .

[His eyes began to flash fiercer fire as] we stood motionless on the defensive, and the crest of short hair which stands on his forehead began to twitch rapidly up and down, while his powerful teeth [fangs] were shown as he again sent forth a thunderous roar. [And now truly he reminded me of nothing but some of those hellish dream creature—a being of that hideous order, half man, half beast, which we find pictured by old artists in some representations of the infernal regions.] He advanced a few steps—then stooped to utter that [hideous] roar again—advanced again, and finally stooped when at a distance of about six yards from us. And here, as he began another of his roars and beating his breast [in rage], we fired, and killed him.

With a groan [which had something terribly human in it, and yet was full of brutishness], it fell forward on its face. The body shook convulsively for a few minutes, the limbs moved about in a struggling way, and then all was quiet—death had done its work, and I had leisure to examine the huge body. It proved to be five feet eight inches high, and the muscular development of the arms and breast showed what immense strength it had possessed."

"These facts are no doubt accurate," says Mr. Akeley; "Du Chaillu and his men pursued a gorilla in the forest. When they came too close, he roared at them. I have seen little monkeys scold an intruder in similar fashion. His face twitched and he beat his breast. My motion picture shows a gorilla beating her breast when not at all mad. The gorilla advanced on them not in a ferocious rush but hesitatingly a few steps at a time. They shot it. 'I don't blame Du Chaillu for feeling the way he did, for under the circumstances in which he hunted the gorilla most people would have had even much worse feelings than he had. All I want to point out is that the gorilla should be judged by what he does, not by how the people that hunt him feel.' Mr. Akeley comes further to the gorilla's defense, to this effect:

The gorilla has no foe but man. No flesh-eating animal in his territory is large enough to harm him. The gorilla is a vegetarian, so he kills no animals for food, and he has not progressed sufficiently along the paths of man to enjoy killing as a sport.

Man's nearest kin among the animals is on its way to extinction if something is not done to protect him, Mr. Akeley thinks. He is not plentiful. He is "neither wary nor dangerous." Yet he is an easy and highly prized prey to the "sporting instinct." The writer suggests that a gorilla preserve, in the region at present inhabi-

lunts its under-water prey mostly by a white. The eyes are very small and it is in color, with the under part a grayish water and dries very quickly. It is brown completely protects the body from the short, softer, and short. The outer fur is shiny and crisp, while the under fur is

## THE ECLIPSE AND EINSTEIN

**A**NXIETY AND IMPATIENCE often await the development of a batch of photographic plates, but perhaps never before have so many people in all parts of the world been eager to learn "how the plates turned out" as in the case of those brought back from Australia by Dr. W. W. Campbell of the Lick Observatory. These negatives, taken during the eclipse of September 21, contained the evidence for or against the Einstein theory of relativity. The man who manifested the least anxiety about the results of the eclipse expedition, says Dr. Edwin E. Slosson, in Science Service's *Daily Science News Bulletin* (Washington), was apparently Einstein himself. He made up his mind eight years ago how the heavens would behave, he remains seemingly indifferent to the astronomers to find out how they do behave. To quote:

"It followed as a logical deduction from his activity of all measurements in space and time, passing close to the sun would be drawn out on a straight course as tho the light were attracted by the pressure of such a heavy mass. And the path of the ray is drawn inward toward the sun, an observer on the earth looking back up the sun would see the star as tho it were moved toward from the sun. If a photograph of a group of stars taken with the sun in the middle is compared with a photograph of the same group viewed out the sun, the images of the stars in the foreground will seem to have been displaced from their ordinary positions in the sky. The stars near the sun's disk will naturally seem to have moved out the most. The effect is the same as you noticed when a patron of the bootleggers aboard a crowded street car. All move away from him and those nearest the obnoxious individual move farthest.

"Nobody had discovered or suspected such displacement of star images about the sun. Einstein predicted it from his mathematical theory. As figured out from his formula, a ray of starlight just grazing the sun's disk would be deflected toward the sunny side to the extent of 1.75 seconds of arc. The star images further away would be displaced less according to their apparent distance.

"Of course, the stars can not be photographed shining into the telescope, so one must wait until shielded from the earth by the moon. The British astronomers took advantage of the first opportunity to put the Einstein theory to the test, the eclipse of 1919, and they came back from South America and Africa with the report that the star images were displaced as Einstein had predicted. But they had good photographs of only seven stars and have been sharply criticized in scientific circles.

"But now that President Campbell has explained to the American Philosophical Society of Philadelphia and the National Academy of Sciences at Washington the results of his observations in Australia there is little ground left for skepticism on this point. Instead of seven stars he has five sets of plates containing from sixty-two to eighty-four star images, and when these are measured with the micrometer and calculated to a common position at the edge of the sun, the mean is 1.74 seconds of arc, which is almost exactly the deflection predicted by Einstein. The negatives are 17 inches square and it took Dr. Campbell fifty hours of working time to measure up the stars on a single eclipse plate in comparison with one of the same section of the sky at other times.

"The same plates were measured by different astronomers who could not know what the results would be until they were finally figured out. Check plates taken of other stars show that the displacement images can not be due to any defects of the telescope or sensitive plates. The Canadian eclipse expedition also obtained observations confirming the Einstein theory.

"So certain does Dr. Campbell feel of these conclusions that the Lick Observatory will not devote further effort to the verification of the Einstein theory, altho the next eclipse comes in California September 10. The British astronomers had previously announced that they would not send out an expedition to observe the coming eclipse if the results of the Lick expedition to Australia last year settled the matter satisfactorily. This it seems to have done, but there are enough other unsettled problems in the relative theory to keep scientists busy many years."

## IS THE EINSTEIN THEORY A CRAZY VAGARY?

**I**NDUBITABLY IS, according to Capt. T. J. J. See, of the U. S. Navy, one of the astronomers who has refused to bow the knee to Relativity. The recent eclipse observations agree not only with Einstein, he says, but with astronomical formulas deduced over a century ago. Furthermore, Einstein's theory of gravitation fails to explain familiar phenomena and is, as above stated, "a crazy vagary" and "a disgrace to the age." Professor See has himself promulgated a theory of gravitation, which he says is not open to these or similar animadversions; but we quote him here only in relation to that proposed by Einstein. He writes in a letter from California, printed in the *New York Times*:

"1. It can not be truthfully said that the confirmation of the Newton-Soldner formula of 1801 for the refraction of starlight near the sun is a triumph for Einstein. This formula dates from the early days of Einstein's grandfather—122 years ago!—and in a dispatch from Berlin, April 14, Einstein himself admitted to the correspondent, Karl von Wiegand, that 'in so far as precise measurement is concerned Captain See may be said to be correct in denying that the test proved the theory of relativity.' Einstein hoped, however, that in more favorable circumstances the difficulties of the theory might be removed. It thus appears that Einstein does not regard his theory as having triumphed, and all such inference is quite premature.

"2. You admit the general rejection of relativity by eminent European philosophers, thus:

"In January of this year it was reported from Berlin that fifty German physicists, mathematicians and other philosophers were 'seriously grieved' to see public opinion misled by the suggestion that the theory of relativity is the solution of the problem of the universe, and by the concealment of the fact that many savants, 'including the most distinguished,' do not accept this theory as a proved hypothesis, but look upon it as fiction."

"In the circumstances, is it any wonder that some of us who owe a duty of truth to the public should be obliged to contest vigorously the unauthorized and indefensible conclusion that the observed refraction of starlight near the sun is a confirmation of the discredited doctrine of relativity?

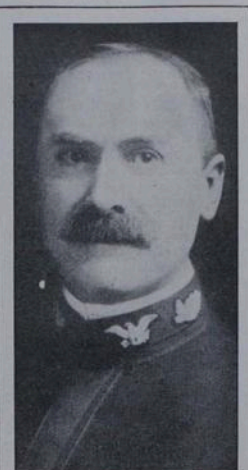
"3. After ample reflection I have described relativity as 'discredited,' and I will now proceed to give particulars:

"(a) Einstein's theory does not explain centrifugal force, the law of which was established by Huyghens 250 years ago, and confirmed by Newton in his immortal 'Principia,' 1687.

"The law of centrifugal force is verified by every boy who whirls an apple by means of a string tied to the stem. It is verified daily in every laboratory in the world, and has been known for 250 years! Is it not therefore careless, wicked, perhaps criminally dishonest, for the Einsteinists, who claim 'there is no ether,' to pass over the difficulty of the centrifugal force as if it were not real? Accordingly, we understand why Michelson rejects Einstein, because Einstein rejects the ether, for sending us light and holding the planets in their orbits.

"(b) The central force required to hold the moon in its orbit about the earth is equivalent to the full breaking strength of five-million cables of steel, each a foot in diameter, when the steel has the tensile strength to lift thirty tons to the square inch. In the same way the central force required to pull the earth around the sun is equivalent to an eleven-inch cable of steel on each square foot of a hemispherical cross-section of the earth—so that to hold our planet in its orbit its hemispherical surface toward the sun must be almost covered by solid cables of steel. The ether sustains this immense force, and it was so held by Newton.

"(c) In proposing to do away with the ether, therefore,



Copyrighted by the Keystone View Company

"A CRAZY VAGARY"

Is what Captain T. J. J. See calls the Einstein theory of relativity.

Digitized by the Hunt Institute for Botanical Documentation

# A Petrified Forest

By Craig Hopkins

THE sight of a prostrate forest in itself is most impressive and appeals strongly to the imagination. The spectacle of fallen giants lying across one another in all positions, some shattered and broken and others with their great length intact, is enough to excite wonder and set one to thinking. But when the woody fiber of these old trees, by some strange alchemy of nature has been changed into everlasting

has retained the markings and veins that originally characterized it as bark and fiber. The colors in these chalcedony and jasper logs are altogether different from those in the living wood. When it was found that the stone was capable of a high polish and that it could be worked up for all purposes for which onyx or tinted marble was used, folks began to cart it away at a rate that would soon have done away with the whole wonderful formation. So the United States Government took charge, and by an act of Congress made it one of the national monuments to be preserved for all time.

No end of theories have been advanced to account for this strange freak of nature, but the explanation most generally accepted is that millions and millions of years ago, during some convulsion of nature, perhaps a tornado or a flood uprooted these ancient trees and they were floated from the place where they grew to the place where they are now found. As the land contained minerals that colored the water with rainbow tints, and as silica and lime were dissolved in the water in large quantities, the colored water was absorbed by the wood as the fiber gradually decayed. This slow process took ages, but at last every particle of wood disappeared, being replaced by particles of lime and silica. In this way the logs became stone, or as we say, became petrified.

Following this came great volcanic disturbances, burying the logs at the bottom of a sea under a deep layer of ash. Then, with the passing of other centuries, came deposits of sandstone and limestone on top of it all. According to some scientists,

the logs must have been buried to a depth of twenty thousand feet. Then something happened to stop the subsidence and the bottom of the sea began to rise. Slowly it was lifted, until at last the land emerged and the waters rolled away leaving the land dry. But the dead forest seemed buried for good under its layers of ash, sandstone, and limestone. Through the action of wind and rain and gradual erosion, or eating away of the soil and the rocks, the long-buried trees were left exposed as we see them to-day.

Arizona is a land of natural marvels, chief among them being the Grand Canyon of the Colorado, the deepest gash that the earth has ever suffered. There is also the



© Underwood & Underwood

THE MARBLE TREE BRIDGING THE RAVINE

marble, showing tints that rival jasper, agate, and chalcedony, amazement takes the place of wonder, and one stands stunned in the presence of this miracle of the ages.

In the eastern part of Arizona, in Navajo County, near Holbrook, is probably the strangest forest in all the world, a forest of stone. The trees are not standing as forest trees are supposed to do, but lie prone on the ground as if sleeping, and sleeping they have been, perhaps for centuries upon centuries. The area included in this wonderful forest is about sixty square miles, and in every direction may be seen the shattered trunks, some of them more than twenty feet long, and many of them from four to five feet in diameter. They lie in every conceivable position.

The most amazing display takes the form of a natural bridge, where one of these stone trunks spans a deep ravine. The length of this

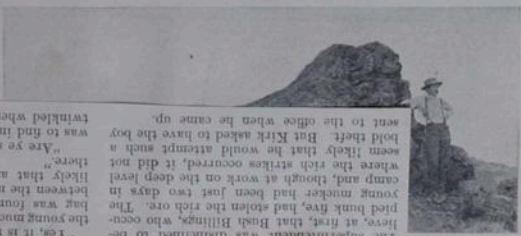
trunk twinkled when he asked this question. "Was to find in this bunk?" Mike's thin "Are ye sure ye found everything?" "Likely that anyone else would have put it there." "Between the mattress and the hank. It isn't that was found under it to-day, studied in the young mucker," answered by Bush Billings. "Yes, it is now occupied by Bush Billings."

The superintendent was determined to be sent to the office when he came up. "bold theft. But Kirk asked to have the boy seem likely that he would attempt such a where the rich strikes occurred, it did not camp and, though at work on the deep level in young mucker, had been just two days in pried bunk they, had stolen the rich ore. The boys, at first, that Bush Billings, who occu-



© Underwood & Underwood

GREAT CHUNKS OF THE TREES LIE FILED ON ONE ANOTHER



Notes on Wells Outline of History.  
Chap. III.

All life has power of growth, takes nourishment, moves about, reproduces, and has limit of growth. Life is also characterized by individuality. No two living things were ever exactly alike.

Life progresses and develops by a process called Natural Selection or Survival of the Fittest. Life also changes to conform to its environment (Modification of Species). Species divide in accordance with the different environments of different divisions of the same species. (Differentiation of Species).

The Record of the Rocks breaks in upon a world already inhabited, at least in the seas, by a vast variety of forms of life.

Chap. IV.

The first animals to stay out of water for short periods had to develop means to keep from drying up.

The first plants to live out of water developed ways of reproducing without submergence. The gills of the fish gradually became the lungs of the first land animals. When animals reached the reptile stage they could live and reproduce entirely out of water.

The great coal measures of today were made of swamp forests of this period in which there

## STONE TREES FOUND IN GILBOA RESERVOIR

Oldest Recorded Forest in  
World Yields 40 Petrified  
Stumps.

The city of New York is digging out of its new storage reservoir at Gilboa, in Schoharie county, what Professor John M. Clarke, director of the state museum in Albany, says is the oldest and most important fossil forest in the world.

Forty of the stone tree butts, estimated to be about 300,000,000 years old, are now being arranged in the state Museum, and more are being added from time to time as the blasters encounter them in the rock at Gilboa. One of the petrified trees is on exhibition at the Grand Central Palace, New York.

### Tore Way Westward

Dr. Clarke says these fossil trees belong to the Devonian period.

"The rivers of the Devonian time, which tore their westward way down the wooded slopes of the old land where the southern New England states and their buried Atlantic neighbors now lie," said Professor Clarke recently, "emptied themselves of a vast burden of sand which is now piled up in great thickness in the Catskill region of New York, the hills and valleys of which now bound what was the seaward edge of that ancient land."

"This Schoharie forest, earliest of all recorded forests of the earth, is of very great interest from a scientific point of view, though we are puzzled not a little to comprehend just the nature of these shore-growing woods. If the diameter of the trunks is carried upward in a tapering slope these trees must have reached the very considerable height of 200-300 feet, but it is possible that the trunks broke up not so far above their base into a shrubby or bushy cap. Their real nature is still a problem for the student of fossil plants."

### Under Lowest Forest

"At any rate our ancient New York forests afford an index to the geography of the western Catskills and the Schoharie valley during the late Devonian period to which they belong. The tree stumps were found in places where they grew, and the shales under them are the mounds in which they were rooted, and they are preserved at least two levels in the rocks, one sixty feet above the other. Not far under the lowest forest the rocks carry true marine fossils."

"Tangled in the rootlets of the lower trees were found the remains of some brackish water crustaceans. The sea which covered this region slowly withdrew and the trees crept down from the land to the water's edge, or grew over the delta plain of the fresh water streams flowing in from the old land at the east. Then for a long time the first forest must have been flooded by the waters, probably by the rising of the sea which deposited the 60 feet of overlying rocks, until another retreat of the water again brought the forest down to the shore."

### Evolution

I find in all of Adam's brood, in all the human brotherhood, a lurking longing to be good. Beneath our selfishness and pride is something never satisfied. O long ago, an eon space, there swam in some warm cozy place, the parent of the human race. He lived within a mudhole smelly, he had no bones, his flesh was jelly. But something in that bit of goo kept urging "There's a chance for you." So life flowed down through countless ages in many types and many stages, still pressing on to bridge the chasm 'twixt man and one-celled protoplasm, until those chunks of jiffy jellum had cerebrum and cerebellum. At first their brains were but a smear, but they increased from year to year, till in the fullness of the times, came Shakespeare and these rural rhymes. Suppose that, lazy or afraid, the old primeval germ had stayed within the mud where he was made, we'd have no workers and no scrappers, no charming Hannahs and no flappers. While gazing on some men I know it seems we still have far to go. But that amoeba stout of heart, has given us a right good start. O let us burst each narrow prison and serve our time as he served his. So shall we keep right on advancing, not only mind but soul enhancing, with courage, faith and wise decision toward some far off but hopeful vision of higher life that some how dodges, such forms as Hearsts and Cabot Lodges.

—Bob Adams.

were no flowering plants and no real trees. There were numerous insects in these swamps. "Land life of the Upper Palaeozoic age was the life of green swamp forests without flowers or birds or the noises of modern insects." There were wallowing amphibians and primitive reptiles.

#### Chap. V.

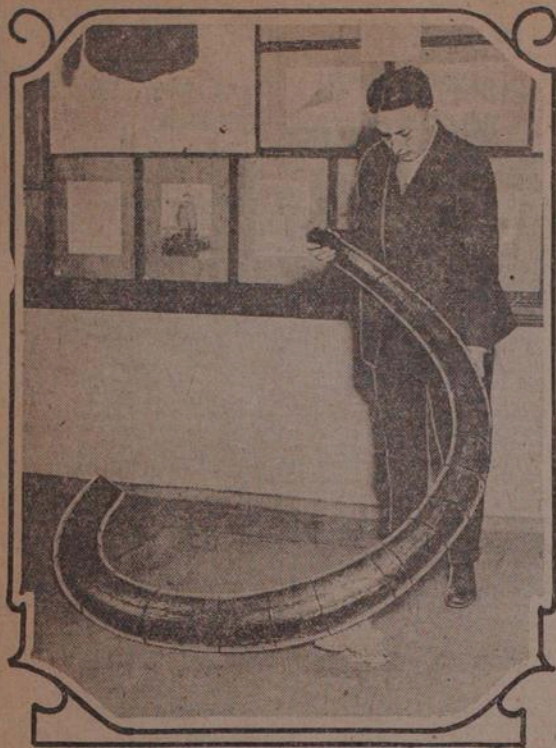
After the Palaeozoic period there comes a blank. Then the Mesozoic opens with a richness of plant and animal life however with few flowers and still no modern trees.

Reptiles had become land animals. Mesozoic reptiles stood on all fours and some learned to balance themselves on their hind legs and tail. These reptiles were of enormous size some being over one hundred feet long. Some of the small reptiles were bird like but were not however the ancestors of birds. Birds however are developed from reptiles - reptilian scales developed into feathers. Then there occurred another break at the end of the Mesozoic age.

At the beginning of the Cainozoic age all reptiles had disappeared as well as Ammonites - sea creatures with coiled shells.

11/17/22 2. The earliest mammals were very small - probably dwarfed reptiles. They slowly developed

## TUSK OF MAMMOTH ANIMAL



Keystone View Co.

H. T. Green of the Academy of Natural Sciences, of Philadelphia, showing the immense tusk of a Mammoth (*Elephas Primigenius*) which was dug up out of the earth near Rampart, Alaska, by Benjamin G. Warnick, of Philadelphia, while gold mining.

The length of the tusk is about twelve feet; it is eighteen inches round and weighs about a hundred pounds. This is the largest specimen ever found in Alaska. It is estimated that the monster roamed the frozen North more than ten thousand years ago and stood from ten to fifteen feet high.

## FOSSIL REMAINS OF GIGANTIC PATAGONIAN DINOSAUR FOUND; THIGH BONES NINE FEET LONG

Buenos Aires, Dec. 18.—(By the Associated Press)—Discovery of the thigh bones of a Patagonian dinosaur, each bone measuring two meters, seventy centimeters (nearly nine feet) in length, and claimed to be the largest unearthed in any part of the world, was announced to-day by La Plata Museum.

These two bones, together with other fossil remains of the gigantic animal, were found by the museum's paleontological experts at Nequen on November 20th. It is stated that the largest thigh bones previously unearthed measured two meters, ten centimeters, and were discovered in the United States.

The skeleton of the great, bipedous assembled at the Carnegie Museum has thigh bones only one meter, fifty centimeters long, although the entire skeleton measures twenty-five meters, and from these figures it is conjectured that ~~when~~ the Patagonian dinosaur roamed the Mesozoic forests he was at least forty-five meters, or about 140 feet long.

Further explorations are planned for next March, in an effort to unearth the remainder of the skeleton.

### End of Cromagnon Age

About 15,000 years ago the Cromagnon age in Europe came to an abrupt end. There developed a sudden mildness to the climate, accompanied by cool rains. Heavy forests sprang up on what had been the open grass lands of wild reindeer, wild horses, and wild bison. Glaciers pulled back up their Alpine slopes; the ice fields that were over what is now Norway and Sweden melted away. The Pleistocene age was over and the modern era was at hand. Cromagnon people all but vanished from western Europe; Cromagnon art was no more. Whether these wild chestnut-haired hunters followed the ice into what is now Russia, or whether they became extinct, no one knows. Certain it is their former lands were deserted when the next race of man appeared.

from scales hair that enabled them to withstand the climatic change that exterminated the reptiles.

#### Chap. VI.

The Cainozoic brought forth the direct ancestors of present day life including plant life. Grass became a great factor.

Mammals are viviparous and young protecting. Mammals are also family animals.

During the early part of the Cainozoic the most attention was being paid to the development of brain.

The Age of Mammals (Cainozoic) ended in the world growing colder and great portions becoming covered with ice.

The ancestors of man appeared about this time.

## IS MAN MORE THAN MUD?

**D**OUBT IS OFTEN THE FIRST LOT of the young student who ponders on the perplexities of life and attempts to reconcile the facts and theories of science with the philosophy of religious faith. This has been true in no age more than the present, and it has been repeatedly charged that most colleges, instead of helping the inquisitive young mind to a firm belief that faith is the solvent of all perplexities, and that God is a reality as fix in human experience as are the stars in the firmament, are breeding-grounds of agnosticism. This attitude of the young agnostic toward the "puzzle" of creation is aptly set forth in a university student's letter expressing his religious views. The letter was recently brought to the attention of Professor John Wright Buckham, of the Pacific School of Religion, with a request for a reply. Professor Buckham sets himself the task of reasoning against the young man's "rational" hypothesis and of offering him proofs of Christian religion. Both letters appear in *The Christian Century* (Un denominational).

The student goes over the familiar ground of the nebular hypothesis, and says: "Let it be remembered that in that vast parent nebula everything earthly resided potentially—everything from skyscrapers to dreams. In some hot-bed, when the earth had cooled off sufficiently to allow life (which was potential in the parent nebula), the ameba, or some similar simple animal came into existence." This, says the youthful philosopher, was the parent organism of all living organisms that we know to-day. "There! most excellent Theophilus," he exclaims, "make answer whether I am wrong or right, and why." Continuing, the student asks:

"What has God to do with all this? Not much, it seems evident. The Greeks erected a temple to 'The Unknown God.' They were wise. They didn't profess to know the unknowable. What scientific evidence have we for God? None at all. He is, then, an hypothesis to explain the ultimate nature of things, according to modern philosophy.

"In the evolution of the religion of the Hebrews an infinite, universal, holy, loving, personal God was attained.

"The ethics of such a religion was beautiful. Can't we retain the ethics and discard the animistic ideas of God? What good does it do to pray to God? All so-called answers to prayer can be accounted for by psychology. Nature is uniform. The petitions of insignificant men will not change it. God can not be personal—he can not hear prayers any more than energy or matter are personal or can hear prayers.

"In summary, let me say this: God is simply a philosophical hypothesis—an explanation of that which is beyond science. Man is simply evolved, rationalized mud. In his wisdom he has developed laws of morality and ethics. In his weakness he has linked them up with God for sure enforcement."

This statement may be taken as fairly representative of a view of nature and religion which is now widely prevalent in American colleges and universities, says Dr. Buckham. Much of it, he replies, is in accord with modern science and as such is to be accepted. However, science is "more hypothetical" than is recognized by this student, and it "is not to be expected that he should distinguish between a well-established hypothesis and a complete demonstration." The professor answers the student's assumption that God can not have much to do with the evolutionary process by citing that many of the leading exponents of evolution, including Alfred Russell Wallace, George J. Romanes, N. S. Shaler, Joseph Le Conte, J. Arthur Thomson and others "have reached quite the opposite conclusion." The statement that we have no scientific evidence "at all" for God is without support, "for science takes account of facts, and one of these most secure facts in human history is the fact of religious experience. As far back as knowledge goes, men have experienced, or supposed they have, Something or Someone—many beings or one—with whom they have had to do. As this experience has become more thoughtful and enlightened, it has conceived of God in more and more rational and spiritual terms, until, in Christianity, it has reached the conception of God as father. It is easy to brush all this aside either as superstition or illusion, but it is more reasonable and more scientific to seek some reality behind this experience."

Psychology, says Professor Buckham, can not "account for" the supposed intercourse of human minds with God, since "psychology, by its very nature, does not, and can not, deal with primary causes. It is not concerned with ultimates, but only with phenomena." In the sense of interferences with rational processes answers to prayer "may have been discounted, but prayer itself as a spiritual force, operative in accordance with spiritual laws, has a firmer hold upon intelligent minds than ever before." As to the argument that God may be conceived of "simply as a philosophical hypothesis," why, asks Professor Buckham, "is a philosophical hypothesis less reliable than a scientific one? Evolution, too, is an hypothesis. Why should the latter be accepted and the former set aside?"

"If evolution succeeds in accounting for the genesis of the planet, the appearance of life, the descent of species, the origin of man, the hypothesis of God alone succeeds in accounting for the causal and teleological problems back of all these. Not, to be sure, with equal definiteness, for in the realm of the ultimates the factors dealt with are not tangible and concrete. Yet, when rational reflection supplements religious experience and faith exercises its rightful office, the evidence for God is ample.

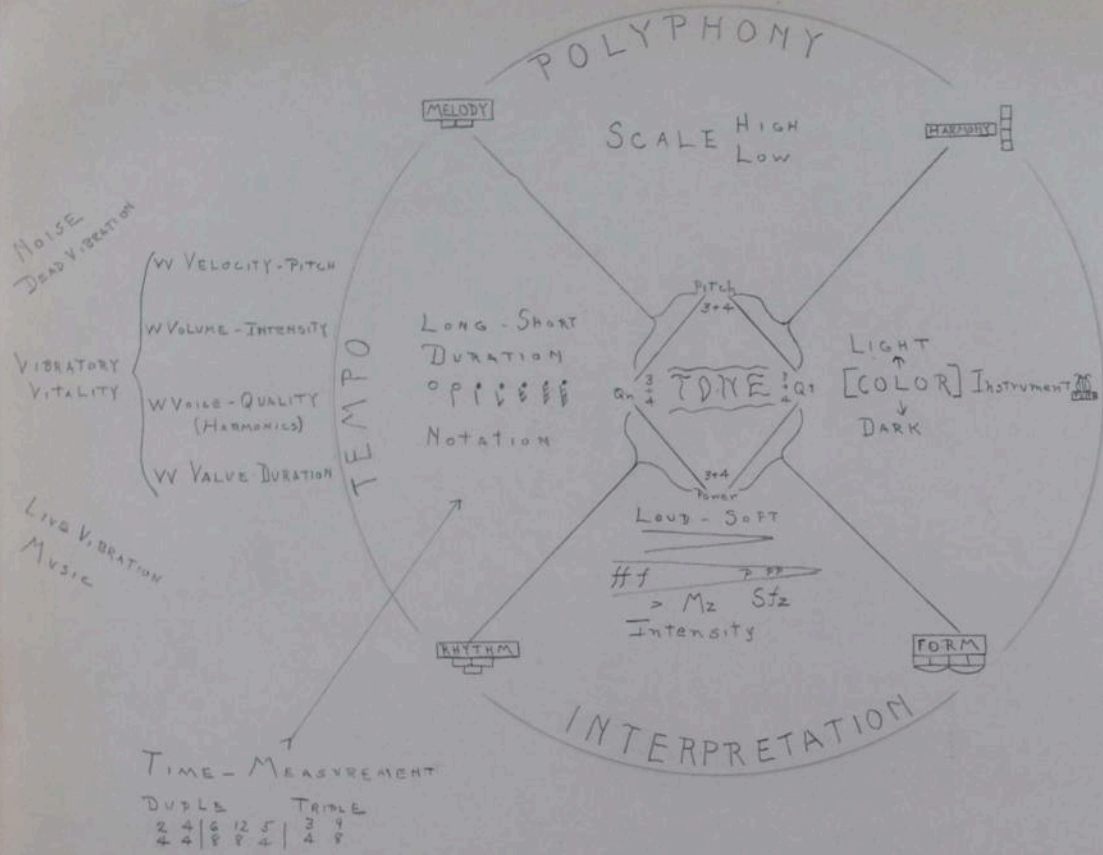
"As to man's being simply 'evolved, rationalized mud' the assertion is not so bad as it sounds. If the mud has been rationalized it is certainly something more than mud. It is transformed, spiritualized, personalized. It has become person, or at least has a place within it for personality.

"This is what makes evolution as capable of a religious, as it is of a non-religious, application. Granted that something of the 'muddy' nature is still left within us—a fact which Christianity has never questioned, and in some forms of it has made quite too much of—that only heightens the conviction that 'a spark disturbs our clod.'

"This student is no iconoclast, no mere radical. He has evidently revolted, as a clear mind is bound to revolt, from the anthropopathic God of an unthinking orthodoxy. In this revolt he has fallen back upon a reverent agnosticism.

"Yet he sees the supreme worth of the ethical ideas of the Hebrews, and asks: 'Can't we retain our ethics and discard the animistic ideas of God?' Yes, we may discard the animistic ideas—if by animistic is meant the crude and individualistic—but not the personal idea of God. For ethical principles are bound up with personality, and if persons are a mere by-product of nature and there is no eternal spirit in whom we live and move and have our being," then ethics can hardly be expected to hold out against an indifferent universe.

"It is in wisdom as well as 'weakness' that man has linked up the laws of morality with God. Evolution has by no means broken the link."



## Sound.

Sound has three requisites - source, vibration and a resonating body. The vibrations are inaudible unless hooked up to a resonator. A resonator is a sort of sounding board which is forced into vibration by the sound vibrations. All bodies including columns of air can act as resonators. However all bodies are not good resonators. Every body has its natural period (rate of vibration) in which it would naturally vibrate. However a body can be forced into vibrating at any desired rate. The limits of sound vibration are 16-30000 vibrations per second. The amplitude of a vibration is the distance of displacement from the natural position.

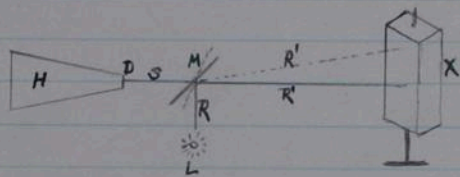
Sound requires a material medium for transmission. Sound transmission is by wave motion, the medium vibrating longitudinally in the direction the sound is traveling. The transmission is accomplished by the movement of the particles of the medium (compression and rarefaction of them). However the particles themselves are not transmitted. It is only energy which is transmitted.

12  
Sound has three characteristics. Pitch intensity and quality. The pitch depends upon the frequency of the vibrations. The intensity (loudness) depends upon the amplitude of the vibrations. The

quality is the characteristic that enables one to distinguish between sounds from different sources. Quality (timbre) depends upon the wave form determined by the harmonics. Harmonics are those sounds of higher pitch produced by a sounding body vibrating in  $\frac{1}{2}$ 's  $\frac{1}{3}$ 's  $\frac{1}{4}$ 's etc. Some sounds have some harmonics more prominent while others have others more prominent, and still others entirely lack some and, in some cases, all.

The wave form of sound has been made visible so that one can now study sound not only with the ear but with the eye as well.

The instrument is on the plan of the following sketch.



It is a horn into which the sound waves enter causing the diaphragm, D, to vibrate. This causes the thread, S, (wound about a spindle connected to M, the mirror,) to actuate M. A ray of light, R, from L strikes the mirror and is reflected R' onto a revolving mirror which in turn reflects it on a screen thereby giving a continuous wave form.

## Our Creed.

I believe that Music, Literature and Art are as necessary for the life of the soul as are food, clothing and habitation for the body.

I believe that Art is based on the eternal laws - Harmony, Truth and Proportion.

I believe that the contemplation of a great picture will strengthen these truths in my own life.

I pledge myself to open my mind to all beauty. I will try to awaken in myself the genius of Understanding and Appreciation.

- Nina Spalding Stephens.

Music is a moral Law. It gives a Soul to the Universal, Wings to the Mind, Light to the Imagination, a Charm to Sadness,  gaiety and Life to everything else.

It is the Essence of Order and leads to all that is Good, True and Beautiful.

- Plato.

We must understand Music as a form of energy. Only when we put all our energy into our interpretations of Music, with others and we ourselves enjoy them.

Music is a form of energy.

Anything containing orderly movement is music.

Anything graceful is music.

Music is matter in movement under the controls of mind.

We shall study music from the Greek standpoint. All of the Greek arts were musical.

Music is energy.

Energy is God. Energy is everything.

Energy =  $E = mc^2$   
                   $\frac{h}{m\lambda}$

Synergy = all forms of energy.  
                  cooperation of all energy.

The matter we use in music is a particular kind of sound. The matter of music is tone.  
Tone is the name of the material out of which music is made.

The great Unity - Energy.

The great Duality - Space and Time.

(Space is primarily empty filled  
at intervals with suns.)

The great Trinity - Matter Music Mind.

Music is action of mind on matter.

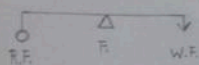
(Noise is uncontrolled).

Universities are for the purpose of getting  
acquainted with the Universe.

A University is a group of professional  
schools grouped about a school of  
Art (Liberal).

The schools in order of recognition as  
parts of a University are (1) Theology, (2) Law,  
(3) Medicine, (4) Arts (Liberal) the central, (5) En-  
gineering, (6) Music.

# MECHANICAL PRINCIPLES

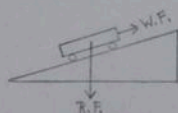


F Fulcrum  
R.F. Resisting Force  
W.F. Working Force

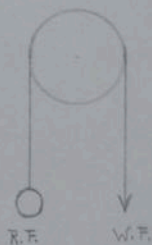
LEVER



WHEEL  
and  
AXLE



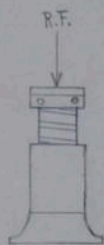
INCLINED PLANE



PULLEY



WEDGE



SCREW

Mechanics is the science of machines.

(Man is a machine's musical instruments are machines).

A machine is a means of transmitting energy. Machines are extensions of the hand. Machines are for the purpose of doing things.

The six mechanical principles common to all machines are - the lever and its related principles, the wheel and axle, and the pulley - and the inclined plane and its related principles, the wedge, and the screw.  
(See pages )

Musical instruments are machines for disturbing the equilibrium of the air.

Musical instruments have three grand divisions common to all - the pitch producing medium - the resonator and the action which sets the pitch producer at work.

In a pianoforte the first is the strings, the second the sounding board and third the key and hammer action. The key is a lever, a refined crowbar.

# WEST COAST DOCTOR



Copyright by Underwood & Underwood.

DR. ALBERT ABRAMS.

Photograph of Dr. Albert Abrams, of San Francisco, originator of the "Electronic" theory of diagnosis and treatment, now in New York to lecture.

Dr. Abrams maintains that he has devised apparatus sufficiently delicate to meter the vibrations present in all matter and thus to determine the health or disease of human tissue.

"A drop of blood," he explains, "with its billions of electrons, is a condensation of the multitudinous vibrations of the body."

"Everything in nature has its natural period or rate, of vibration, as shown by the response of the harp to the tuning fork. Disease is merely the expression of a certain vibratory rate. Something with a similar rate can be imposed upon it and destroy it."

He added, that by examining a drop of blood he could determine age, parentage, sex and physical condition of a subject, unseen—that by his methods unhealthy conditions can be determined in their incipency, even before clinical manifestations are evident—that from a piece of writing he can tell the approximate present location of the writer.

## Octave of Planets

Mercury

Venus

Earth

Mars

Jupiter

Saturn

Uranus

Neptune

Maj. Third.

Perf. Fourth

Dominant.

Lat. Tone

Octave

The art of touch consists of the art of manipulating this lever so that it will cause the string to vibrate in different ways to produce different kinds of tones.

Strings to produce pitch must have length density (strength) and tension.

In singing the pitch producing medium is the vocal cords.

The resonator consists of the hard pallet, bones, of the head, pharynx, nasal cavity, mouth cavity.

The action is the lungs and larynx.

Helmholtz discovered the physical significance of tone quality - the fact that it is the harmonics that make the tone rich and full.

The first four octaves of matter that is up to 8-16 regular movements per second the eye is able to perceive.

The ear may perceive parts of the fourth octave but for practical purposes the range of the ear is from the fifth to the twelfth octave of matter.

Next in order come heat electricity and light.

## A Tree

I think that I shall never see  
A poem lovely as a tree;  
A tree whose hungry mouth is pressed  
Against the earth's sweet flowing  
breast;

A tree that looks at God all day,  
And lifts its leafy arms to pray;  
A tree that may in summer wear  
A nest of robins in her hair;  
Upon whose bosom snow has lain  
Who intimately lives with rain;  
Poems are made by fools like me,  
But only God can make a tree.

Joyce Kilmer.

Schubert and Beethoven were great  
lovers of nature.

Art began with architecture thru the necessity of habitations. Next came sculpture the adornment of buildings then the sculpture was colored and painting came into existence. Then came poetry and finally music as a result of poetry being first chanted and then sung. (see line 14)

Power of music over the emotions ~~was~~ is prominent in all history.

Greek bards (musicians) invented language and enlarged it by singing poetry.

Greeks gave us the primitive laws of science. Their instruments were primitive and simple.

With primitive peoples all arts were one.

Music is the product of climates. We must understand the primitive religions of peoples to understand their music. Then music of primitive peoples is naked.

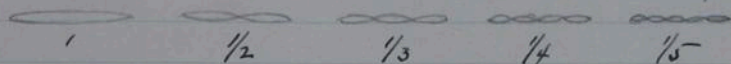
Primitive music is an outgrowth of speech - an elaboration of speech.

In primitive religions the sun (male) was the major divinity and the moon (female) the minor divinity.

Mercury was worshiped by some tribes. Venus' worship developed curious types of music. The Greeks clothed groups of stars with mythology.

A vibrating string must produce elasticity and strength.

A vibrating string vibrates not only as a whole but divides itself into halves, thirds, fourths etc which each vibrate in their own period.



|     |     |   |     |     |   |                |   |   |    |                |    |                |                |    |    |                |    |                |    |
|-----|-----|---|-----|-----|---|----------------|---|---|----|----------------|----|----------------|----------------|----|----|----------------|----|----------------|----|
| 1   | 2   | 3 | 4   | 5   | 6 | 7              | 8 | 9 | 10 | 11             | 12 | 13             | 14             | 15 | 16 | 17             | 18 | 19             | 20 |
| C   | C   | G | C   | C   | G | B <sup>b</sup> | C | D | C  | G <sup>b</sup> | G  | G <sup>#</sup> | B <sup>b</sup> | B  | C  | C <sup>#</sup> | D  | D <sup>#</sup> | E  |
| 64  | 128 |   | 256 | 384 |   | 512            |   |   |    |                |    |                | 760            |    |    | 1024           |    |                |    |
| 192 |     |   | 320 | 448 |   | 576            |   |   |    |                |    |                |                |    |    |                |    |                |    |

1-2 octave - 2-3 fifth - 3-4 fourth - 4-5 maj 3rd.  
5-6 min 3rd - 8-9 whole tone - 15-16 half tone.

The first five give the major triad.

Chords are from naturals (vibrating string) then the harmonics.

Every instrument has a sound <sup>(vibratory)</sup> pattern which is different from <sup>that of</sup> every other instrument.

Music is vibratory patterns. This makes music an exact art. (Get acquainted with the sound of different instruments (vibratory patterns)).

Every room has acoustic properties, good or bad as they may be. They should be such that reflected sounds ~~do~~ do not interfere with the originals.

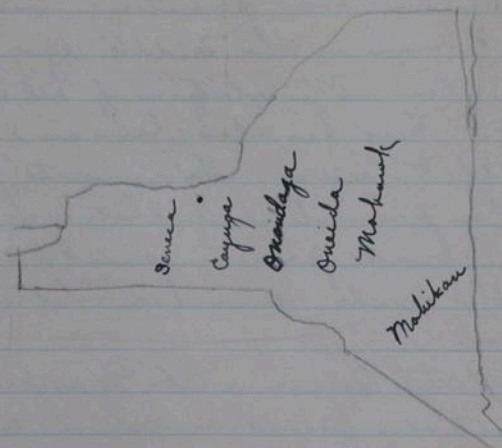
The first drum was two sticks. The drum transformed music into tone. The drum is older than the human voice. (The first musician was a drummer).

We know much about prehistoric man and little about man in the Middle Ages.

There has been an evolution of all things material. There has also been an evolution of the aesthetic sense. The ancients (prehistoric) possessed a primitive aesthetic sense shown by their crude paintings and pictures and also by the crude musical instruments left to us.

The aesthetic sense seeks to express emotions found in animals.

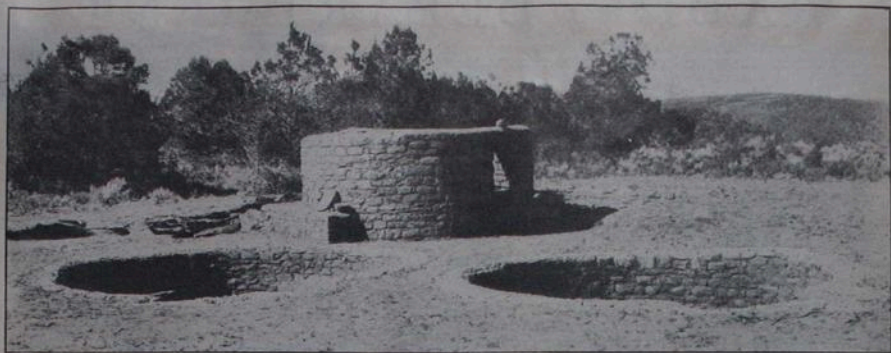
|          |                 |        |             |
|----------|-----------------|--------|-------------|
| Man -    | Fear            | Dogs - | Grief       |
|          | Surprise        |        | Hate        |
| Ants -   | Social instinct |        | Cruelty     |
|          | Affection       |        | Shame       |
|          | Industry        |        | Benevolence |
|          | Pugnacity       |        | Revenge     |
|          | Curiosity       |        | Rage        |
| Fishes - | Jealousy        |        |             |
|          | Anger           |        |             |
|          | Play            |        |             |
| Birds -  | Sympathy        |        |             |
|          | Emulation       |        |             |
|          | Pride           |        |             |
|          | Resentment.     |        |             |
|          | The Beautiful   |        |             |



Artes understood use of fibre + clay.  
Among the ruins of these civilizations  
have been found clay statuettes playing  
percussion instruments and Pan's pipes.

Pan's pipes on decorations of American  
vessels.

The Organ was found among primitive  
people. Also the curve in wind  
instruments.



Courtesy of the Denver & Rio Grande Western Railroad.

FAR VIEW TOWER, MESA VERDE NATIONAL PARK, COLORADO

French used to sell Roquefort here for about 45 cents retail. War conditions raised the prices, but for the last six months or a year they have been coming down, and may very likely go as low as before. American manufacturers find difficulty in competing with such prices.

"About 10,000 pounds a year are made in Pennsylvania; some 2,000 pounds in New York; and a few hundred pounds on the Pacific Coast."

### A PREHISTORIC OBSERVATORY

A SEAT OF SCIENCE among prehistoric Americans has been discovered, we are told in *Science Service's Science News Bulletin* (Washington). Dr. J. Walter Fewkes, chief of the Bureau of American Ethnology of the Smithsonian Institution, just returned from three months at Mesa Verde National Park, Colorado, reports finding an astronomical observatory used by the cliff-dwellers in calculating time for their farming operations. According to the source named above, a round tower, fifteen feet in diameter and ten feet high, was probably used for observations of the sun on the horizon at sunrise and sunset, and the information gained was used in determining the time for planting and performing other agricultural operations. In front of "Far View Tower," as this observatory has been named, there are the ruins of three underground rooms that Dr. Fewkes believes were used for the worship of the sun and other sky gods. We read further:

"A large mound was also opened and investigated by the expedition. When work began no walls were visible. The site was covered with fallen stones and earth capped by sage-brush, identical with many other elevations found in the immediate vicinity. The removal of vegetation and debris, and an excavation of the rooms revealed a rectangular building 70 feet square with walls averaging one story high. It had indications of a lofty tower in the middle of the western side, which must have imparted to the building somewhat the appearance of a church steeple, or minaret, or a mosque. The large room was subterranean, situated in the center of the ruin, its floor being about 25 feet below that of the other rooms. This subterranean room is a kiva (Indian

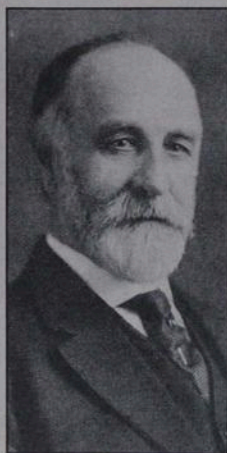
club-house), but differs from others of like type in the Park in that it has no fireplace in the center of the floor, no ventilator or deflector, and has eight mural pilasters instead of six to support its roof.

"The fallen walls within showed indications of a great fire, the stones and adobe being turned brick color and the walls bright red by the great heat. On the floor of the kiva 25 feet deep was an enclosure set off by a semicircular wall where the action of fire was particularly evident. In the enclosure were found many votive offerings, the most numerous of which were a dozen clay tobacco pipes of various shapes and sizes, one or two decorated on their exteriors. These pipes, which are the first ever found on the Mesa Verde, had evidently been smoked by the priests and then thrown into the shrine.

"To the south of the building there was a plaza surrounded by a retaining wall and directly opposite one of the entrances there are aboriginal steps which lead to a rectangular shrine four feet in size, in which were found a number of water-worn stones and a meteorite surrounding a large stone image of the mountain lion. The contents of this shrine were replaced, the

mountain lion left in his original position, and the enclosure covered with a netting to prevent the possible removing of the objects from their places. Other shrines and several stone idols of size were found in the neighborhood. The idols found at Pipe Shrine House represent the snake, mountain lion, mountain sheep, and bird, an important discovery, as previously only one stone animal idol had been found at the Mesa Verde Park.

"Dr. Fewkes declares that one of the most instructive experiences of the archeologist is to see a skeleton centuries old as it lies in the grave. One of the ancient people of Pipe Shrine House was left in a prepared chamber for tourists to inspect. The cemetery lies on the southeast corner of this ruin and in it were found several human burials, from one of which a good skeleton was chosen to illustrate the manner of burial and the mortuary offerings. This skeleton was not removed from the grave, but was surrounded by a stone wall, forming a room rectangular in shape protected by a grating and a waterproof roof. Visitors may now see one of the skeletons of the race of cliff-dwellers as he was placed in his grave more than five hundred years ago. Not a single bone has been moved from position. This is the first time in North American archeology that an effort has been made to protect an Indian skeleton and leave it just as it lay for centuries."



MR. J. WALTER FEWKES.  
Chief of the Bureau of American  
Ethnology, who found the tower.



The Indian Medicine Man returns. This stern looking individual who attracted much attention on Rochester streets last week, claims to be a chief in a long line of Indian aristocrats.—Rowe, Rochester Camera Exchange.

For this Provision aerial, loop may be six vac detector jack man, if de filament veniently left side and ground a jack.



Left — Sho-noh-soh-wah, chief of the Snipe clan of the Tonawanda Senecas, known to his paleface neighbors as Chester Skye, died recently at his home near Batavia.

For this Provision aerial, loop may be six vac detector jack man, if de filament veniently left side and ground a jack. Batavia, set is built very solidly to wear and tear of travel."

## SCIENTISTS TO DIG RUINS OF AMERICAN EGYPT



Copyright by Underwood & Underwood.

Yucatan is considered America's Egypt. A group of prominent scientists have left United States to explore and excavate scene of the Ancient Civilization of the Maya Ruins of the Yucatan Peninsula. Photo shows some of the beautiful Stone Figures of a god above one of the entrances to "Las Monjas" Temple at Chichen-Itza.

# START WORK ON EXCAVATION OF "LUXOR OF AMERICA"

Believed That Apartment House of 900 Rooms,  
Capacity 2,000 People, Is Buried In  
New Mexico Canyon

Washington, May 5.—Excavation of an "American Luxor" in the Chaco Canyon of New Mexico, founded by the earliest civilization known to have existed on the continent of North America, is about to be undertaken by the Pueblo Bonito expedition, organized and financed by the National Geographic Society.

Dr. Nell M. Judd, one of the foremost of American anthropologists, has left Washington to assume command of the expedition which will unearth what the Geographic Society pronounces "the most important prehistoric ruin in the United States."

This ruin is what is left of Pueblo Bonito, seat of the mysterious Pueblo nation that flourished before Columbus discovered America and while the old world pundits were still debating whether the earth was round or flat. For hundreds of years what is left of this community has lain buried or half-buried under desert sands.

By May 15, however, Indian workmen employed by the expedition will be swarming over the walls of the ancient village, teams will be dragging countless loads of earth and stone away, and steel dump cars will scurry back and forth over a miniature railroad depositing the excavated earth far from the scene of operations.

"Almost overnight" the Geographic Society says in an announcement "a canyon which has been deserted since years before Columbus came, will become a bee hive of modern industry."

Pueblo Bonito proper, it is explained by archeologists, was an aboriginal apartment house, the first to be erected on the continent and perhaps to be built in the world. It is estimated it had 900 rooms, was four stories high and was encircled by a single outer wall.

It is this great community house, capable of accommodating 2,000 people, that the present expedition promises to unearth, explore and

study. What may be found beneath the thousands of tons of sand and stone which have all but covered the ruin, no one is able to foresee. It is the hope of the expedition that enormously valuable contributions to the history of early America may be discovered, but it is too soon, Dr. Judd and his associates say, to promise anything beyond the opening to the light of day of an interesting ancient ruin.

"Viewed from the towering north cliff of the canyon," the announcement today says, "the ancient village is semi-circular, with the greater portion of its dwellings or suites grouped along the curved side."

A long row of one-story houses connects the extreme wings of the semi-circle. The middle of the straight row, a cluster of ceremonial chambers extends to meet the curved sections, thus dividing the village, and providing for each half an open court. In these courts sacred dances and religious ceremonies were performed.

"Some ancient walls still stand more than thirty feet high. The 400 ground-floor rooms occupy an area almost equal to that of the United States Capitol at Washington."

"Rooms of Pueblo Bonito are grouped in suites as in modern apartment houses. If they were all occupied at the same time, the resident population of this aboriginal family hotel was somewhere between 1,500 and 2,000 persons."

"The National Geographic Society has been exploring Pueblo Bonito for three years but many problems remain to be solved."

"Whence came the water supply for the prosperous community, for example? What forests furnished the hundreds of beams used in this colossal village standing now forty miles from any timber of comparable size? Where were the extensive fields in which our earliest farmers grew corn, beans, squash and other plants?"

These fields, without doubt, lie buried, the scientists in charge of the expedition now believe, along with the greater part of the village itself. Dr. Judd, in charge of the present expedition, has organized and directed twelve other archeological enterprises of similar character.

We shall study the music of the American Indians first. The first Indian music we study is that of the Iroquois who inhabited New York State after driving out the Algonquians.

There still exist divisions of the human race which are practically the same as they were in prehistoric times. When civilization touches them they seem to degenerate.

The American Indian seems to be a Mongolian in type. However they are a fusion of three types of people - Mongolians, Negroes and Whites all of which came at different periods into North America by way of the Bering Sea.

Different parts of America were inhabited by Indians differing widely from those of other parts. The Eskimos are White Indians. There are also White Indians in North Dakota.

See next page There were five distinct cultures in America when Columbus came - Peru, Incas - Northeastern South America - Maiza - Mexico, Aztecs - Arizona, Cliff Dwellers - Allegheny region, Mound Dwellers.

were driven into the interior, whence none of them is expected to return.

While the accounts generally charge the Turks with setting

All accounts of the rescue work in Smyrna during its harrowing experiences contain evidences of the notable part played by Americans in helping the stricken people. There is, for instance,



"THE HIGHEST ATTAINMENT OF EARLY INDIAN ART."

The "Piasa petroglyph" as figured by Russell (left) and by McAdams (right).

## THE MISSISSIPPI DRAGONS

**T**WO DEVIL-LIKE MONSTERS with outspread wings, carved and painted on the smooth face of a bluff eighty feet above the Mississippi at Alton, Ill., astonished the French explorers Joliet and Marquette, and constituted what is known as the "Piasa petroglyph," said to have been "the highest attainment of early Indian pictorial art." Not a trace remains. What was this famous petroglyph? How came it there? What did it mean? Writing from Princeton University, Mr. Tom English tells us in *Art and Archeology*:

"In June, 1673, Joliet the adventurous trader and Marquette the devoted priest saw it as they passed down on their voyage of exploration. Père Marquette's account is as follows:

"As we coasted along rocks, frightful for their height and length, we saw two monsters painted on one of these rocks, which startled us at first, and on which the boldest Indian dare not gaze long. They are as large as a calf, with horns on the head like a deer, a fearful look, red eyes, bearded like a tiger, the face somewhat like a man's, the body covered with scales, and the tail so long that it twice makes a turn of the body, passing over the head and down between the legs, and ending at last in a fish's tail. Green, red, and a kind of black, are the colors employed. On the whole, the two monsters are so well painted, that we could not believe any Indian to have been the designer; as good painters in France would find it hard to do as well; besides this, they are so high up on the rock that it is hard to get conveniently at them to paint them."

The dragons were still visible in 1849, but in 1856 or '57, limestone makers quarried back into the bluff and the picture was destroyed, and the two drawings we have of it were made by artists who followed descriptions. "They differ mainly in details of horns and tail," comments Mr. English, adding, "Certainly there are irreconcilable discrepancies between the various descriptions." It seems that the tradition exists in two forms:

"One legend relates that in the days when the Illini confederacy held all the territory between the Mississippi and Wabash Rivers, a deadly feud sprang up between the powerful tribes, the Mestehagiamies (or Mestehagiamies) and the Miami. The town of the former was near the mouth of the Illinois River, while the latter's was on the site of the present city of Alton. Between the two was a narrow ravine, in which had dwelt for a long time two huge and hideous monsters, compounded of beast, bird, and serpent, which, as they had never molested the Indians, were left undisturbed by them. The hatred of the Miami for the Mestehagiamies increasing daily, the former decided to surprise and annihilate their enemies. The Mestehagiamies at the same time formed a similar plan, and the warriors of both tribes setting out one morning to attack the other's town before daybreak, they met in the ravine of the Piasas. When the foes were brought face to face in the narrow pass, they at once fell to deadly combat. While the equal fight was raging, a frightful noise was heard overhead and looking up they beheld the Piasas flying down the gorge. With hurried roars and screams they swooped down over the combatants, and each seizing a Miami chieftain in its talons, they flew off. The Mestehagiamies, assured that the devourer birds were sent to their aid by the Great Spirit, fell with augmented bravery upon the dismayed Miami. They drove great numbers into the river, where they were drowned, and massacred many others, the wretched survivors fleeing beyond the Wabash.

"Many years later, when the Miami had settled their score with the Mestehagiamies, at Starved Rock on the Illinois, they returned to the bluffs, and found representations of the Piasas engraved on their face. Since they could not reach the pictures to erase them, they discharged their arrows at them whenever they passed by in their canoes."

The Illini tradition, Mr. English points out, differs completely from that of the Miami:

"It relates that at a time when the greatness of the Illini justified their name, which means 'real men,' a winged monster came to make its lair on the bluffs, of fearful appearance, and so large and powerful that it could seize and carry off in its talons a full-grown deer. Having by some mischance once tasted human flesh, it preyed thereafter on the people, so that villages were depopulated, and no one was ever free from fear. At length, Ouatogo, a great and good chief of the Illini, sought by fasting and prayer to learn from the Great Spirit how the monster might be destroyed. On the thirtieth night, the Great Spirit appeared to Ouatogo in his solitude, and directed him to select from the tribe the noblest warrior. He should be placed on a height above the river as a sacrifice to the Piasa, while twenty braves concealed in ambush should be ready to send their arrows into the monster's body as it descended upon its prey. Ouatogo gave thanks that a plan of deliverance was granted his people, and offered himself as the victim. He stationed the braves about the base of the cliff, and himself stood on the height. He had not long to wait before the devourer saw him and circled down from the clouds. Ouatogo awaited his fate with calm brow, chanting his death song. Just as the Piasa would have grasped him in its claws, poisoned arrows from twenty bowstrings pierced its breast, and with a wild scream it fell dead. When his warriors reached the summit they found their chief unhurt. Then was rejoycing throughout all the villages of the Illini, and in memory of their deliverance the figure of the Piasa was painted on the face of the bluff where it was slain."

What are a modern archeologist's views as to the Piasa's meaning? Says Mr. English:

"I think we may quite simply and surely explain it as a version of the thunder-bird legend, found among all the tribes of Algonquin stock, and widely distributed among the North American Indians. According to this myth, the thunderstorm is caused by a great bird darkening the sky with its shadow. The thunder is the sound of the flapping of its wings, the lightning dash is the winking of its red eyes, and the lightning stroke the grasp of its talons. Therefore the Piasa's spreading wings, red eyes, and eagle-claws. The lightning is further represented by the horns, tail, and the serrations of its neck and wings. Undoubtedly the legends may be roughly worked out on the basis of this explanation, and thus the mystery of an aboriginal art-form, some to possess a real significance."

## COXSACKIE'S FIRST GREAT INDUSTRY

Manufacture of Flint Weapon-  
Gave This Section Its First  
Big Business

Thousands of years ago the Indians developed at Cossackie an industry that supplied tribes and nations from the Atlantic to the great rolling prairies, from the Great Lakes to the Great Gulf, with the implements of chase and of war.

The civilization of today is banded with steel; the civilization of the New York aborigines of five thousand years ago was tipped with flint, flint from Cossackie.

A single hill a mile long, with a mound at one end that turns it into an exclamation point, is all that is left of the greatest aboriginal industry of the country.

Here thousands of quarrymen swing out their hammers, pounding stone on stone. For thousands of years that clanging rang out, sounding the birth of an industrial district.

The purchase of the Algonkian quarries of Cossackie, bearing remnants of a form of civilization far older than that of Tutankhamen, has been endorsed by the New York State Archeological Society because it is the prime archeological monument to aboriginal industry.

The Cossackie quarries were the workshops, then the tombs of the Algonkians, the first men of which archeologists have found any record in this state.

Their history fades into darkness. It is only known that they were here before the mound builders, who were the ancestors of the Iroquois. Flint knives, arrowheads, drills and tools and a single skull have been found at the quarries, leading the archeologists to believe that further evidences of the prehistoric Algonkian period may be found there.

Mr. Parker came to Cossackie, surveyed the hill and made a topographic map of the place. He found three hundred pits in the hillside, conical shaped, and from five to seventy-five feet in diameter. There also are three large quarries about forty feet deep.

The attention of Dr. A. C. Parker, state archaeologist, was first called to the quarry at Cossackie by Jefferson D. Ray of this village, who had made a large collection of the arrowheads from this locality, some of which he took to the state museum at Albany. When Dr. Parker learned of the particulars he was at once much interested.

The discovery of this hillside, according to Mr. Parker, solved one of the great problems which has always bothered archeologists. Flint arrowheads have been found all over the countryside, not only in New York, but all through the eastern states.

Where did this first come from?

Now the question is answered. Examination of the hill shows, Mr. Parker said, that the activity of mining and quarrying must have gone on for more than a thousand years under the direction of expert quarrymen and flint workers.

Tons and tons of flint was taken away by the West Shore railroad when the road was under construction about forty years ago, yet the amount of loose flint at the base of the hill tells of a great industry of a people who are generally supposed to have done little but fish and hunt.

There are places on the hill where the refuse from the quarries runs along for more than a thousand feet and from one to twenty feet in thickness. The side of the hill for more than a half mile are covered with flint chippings, running from the top down the sides for about two hundred feet.

Yet this place, the center of the first industry of Cossackie or for that matter of the Empire State would be passed by without a second glance. A wooded sloping hillside, it looks little different from the hill beside it.

Today the hill is thickly wooded with red cedar, hemlock and white ash. Here and there are immense stumps, monuments of the first growth. The hill stretches north and south, four miles west of the river. A giant exclamation point, it waits the second boom of The Capital District.

No one knows how that hill looked five or ten thousand years ago, but the things that are known help to conjure up a mental—more, an auditory—image of our greatest aboriginal industrial center.

Flint and jasper, and several similar stones, Mr. Parker tells us, were the only substances that the Algonkians had to cut wood, to saw bone. They chipped the flint to razor edge and it was more efficient than our steel implements.

Many of the aboriginal peoples used flint, but few of them had such a great natural resource as the quarries at Cossackie. The nations who lived in this country five thousand years ago believed that a great natural resource belonged to all people, not to one single nation.

Therefore, the workers of many nations gathered here to hew out weapons and implements for their tribes. They lived in little settlements near the quarries and they met around council fires to discuss how best to protect their mines and their workers.

The ringing of hammers on sledges resounded up and down the Hudson day after day through hundreds of years, as the industry grew and expanded, the holes going deeper and deeper into the rock, the three great quarries becoming great echo-throwing caverns.

The Indians of Georgia heard it as they come up the river in their long wooden canoes, paddling slowly after their tedious journey in and out of the bays and harbors of the Atlantic coastline.

The Indians from Georgia were probably Muskogean, gaudy tribes with the feathers of parquets and other southern birds in their hair, naked to the waist, with ornaments of deer and moosehair around their arms and necks.

The Rockaways from Long Island heard the pounding of stone on stone as they sailed up the river in their light birch bark craft. They brought

with them the shiny pebbles from their beaches to make into useful weapons and implements.

Out of the north, from beyond Lake Champlain, came the Adiron-

dacks dressed in fur-trimmed garments, and from the east the Pequots and the Mahikans from New England.

All of them came in answer to the echoes from the quarries of Cox-sackie.

The workers and the warriors brought the women and the children with them. Some tribes set up village of their own in the neighborhood. Others visited in the village of the Algenkians, the keepers of the quarries, and still others stayed across the river in a great village of the Mahikans.

In the daytime the women cooked and performed village tasks. The children played with scraps of flint they had picked up near the quarries. The hunters were off hunting. And all day long the pound continued, even, unending.

Many men were pounding. There was division of labor five thousand years ago. There were the rough quarrymen who pounded through the stone until the flint level was reached.

There were the men with the great sledges who hammered out the pure flint from between its layers of valueless stone. Then carriers removed the flint in baskets, taking it to the tester who separated the best flint from that of lower quality.

And thus the work went on. As it was ages ago when these quarries were worked, so it was ages ago when the work ceased, but the evi- that this was once the scene of great human activity is indisputable.

A petition to Governor Smith requesting his signature to the bill passed by the legislature appropriating \$3000 for the purpose of purchasing the flint quarries west of this village, was circulated last week and very largely signed.

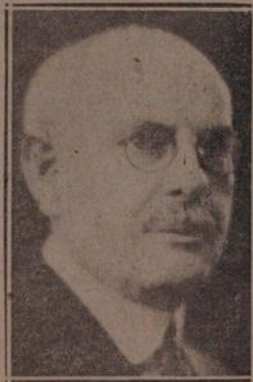
## ARCHÆOLOGISTS RE-ELECT DEWEY AS PRESIDENT

Huge Mounds of Indian  
Relics at Athens, N. Y.  
Available for Purchase  
for \$1,500—Rochesterians  
at Convention.

By George B. Snell.  
(Staff Correspondent of The Times-Union).

Albany, March 3.—Alvin H. Dewey of Rochester was re-elected president of the State Archaeological Society at the final session of the annual convention here this morning. Walter H. Cassaber, also of Rochester, was re-elected secretary. Other officers chosen were: Honorary president, William M. Beauchamp, Syracuse; vice-president, William L. Bryant, Buffalo; vice-president, David E. Dorn, Cooperstown; vice-president, Arthur Patton Smith, Herkimer; vice-president, Geo. H. Thatcher, Albany; vice-president, Geo. F. Kunz, New York; director and treasurer, Arthur C. Parker, state archaeologist.

Huge mounds of arrow heads and other relics that tell the story of human life as it existed thousands of years before the first white man saw America can be purchased by the state for approximately \$1,500, and undoubtedly will be if the New York State Archaeologi-



ALVIN H. DEWEY.

cal Society and the State Department of Education can come to an agreement as to which institution should submit to the legislature a bill providing for the purchase.

The mounds are located at West Cuxsackie near Athens, N. Y., on the Hudson river across the river from this Town of Hudson. The 45 acres of flint deposit over which the relics are scattered in some places to a depth of ten feet are the property of the New York Central railroad. Until recently the stones on which is written for the trained eye of the archaeologist the history of the aboriginal Americans were used for ballast on the West Shore railroad. Arrow heads have been scattered from Weehawken to Albany.

Some thousands of years before Columbus sailed the Western continent the flint quarries at West Cuxsackie was the center of the Indian household utensil and munitions industries. According to Dr. John M. Clark, director of the State Museum, and State Archaeologist John Parker, who is himself a full-blooded Indian, the industry was carried on on a very large scale. Not only did the Indians of that locality make implements of war and other stone instruments for barter with other tribes living in far distant quarters, but also Indians from as far away as the present state of Georgia brought flint and quartz in the rough to be hewn by the Hudson river tribe into implements of various kinds. This theory is easily proved by the fact that in the Cuxsackie deposit are found many broken arrow heads and scraps of quartz and varieties of flint found in large quantities only in Georgia and other far distant sections.

The discussion of the purchase of this property from the New York Central railroad was the principal business of the State Archaeological Association which opened its first annual two-day convention here last evening. Alvin H. Dewey of Rochester, president of the society, presided. Among the other Rochester delegates were Walter Cassaber, secretary of the organization, H. C. Follett, Edward C. Kelly, Clement L. Miner, Edwin G. Foster and Miss Marjorie Marble of Batavia.

### Music of American Indians.

The music of the American Indians is solely and simply vocal. It seems to be generally agreed by musical authorities that the Indians' songs have in them nothing borrowed from instruments, nothing of artificial instigation. An Indian melody never serves two sets of words. There is no instance, it appears, where the people have sung the different stanzas of a ballad to the same air. A large proportion of Indian songs are entirely without words at all, syllables being employed to carry the tones. Perhaps the most striking peculiarity of Indian music is the lack of definite pitch. The Indian begins his song where the natural quality of his voice and his mood at the time render it easiest for him to sing it. The pitch of the song depends upon the individual.—Washington Star.

| Dance     | Metre                            | Form           | Tempo | Character                                | Origin.    |
|-----------|----------------------------------|----------------|-------|------------------------------------------|------------|
| Allemande | $\frac{4}{4}$ ♩   d      d       | 2 pt<br>(1)    | Fast  | Calm, graceful<br>learned                | Slovakian. |
| Courante  | $\frac{3}{4}$ or $\frac{3}{2}$ ♩ | 2 pt<br>(or 2) | Swift | Fluent<br>running.                       | French.    |
| Sarabande | $\frac{3}{2}$ ~ $\frac{3}{4}$ ♩  | 2 pt<br>(or 2) | Slow  | Stately, then<br>emotional with<br>Bach. | Spanish.   |

Galantierian inserted here.

|       |                                   |                |          |                                           |                              |
|-------|-----------------------------------|----------------|----------|-------------------------------------------|------------------------------|
| Gigue | $\frac{6}{8}$ or $\frac{12}{8}$ ♩ | 2 pt<br>(or 2) | Quickly. | Merry, Joyous<br>Open Fuged with<br>Bach. | Italian<br>Giga.<br>(Kiddle) |
|-------|-----------------------------------|----------------|----------|-------------------------------------------|------------------------------|

Galantierian — usually with alternates as trios.

|           |                 |                       |                     |                                      |                   |
|-----------|-----------------|-----------------------|---------------------|--------------------------------------|-------------------|
| Minuet    | $\frac{3}{4}$ ♩ | 2 pt.<br>(4)          | Moderate.           | Daintily<br>Courtly.                 | French<br>(many). |
| Gavotte   | $\frac{4}{4}$ ♩ | 2 or 3 pt<br>(3 or 5) | Moderate            | Strongly<br>Rhythmic.                | French.           |
| Bourrée   | $\frac{4}{4}$ ♩ | 2 pt<br>(3 or 5)      | Quick.              | Vigorous.                            | French            |
| Passepied | $\frac{3}{4}$ ♩ | 2 pt                  | Quick<br>Minuet.    |                                      | French.           |
| Loure     | $\frac{4}{4}$ ♩ | 2 pt.<br>(3 or 5)     | Moderate            | Similar to<br>Bourrée but<br>slower. |                   |
| Polonaise | $\frac{3}{4}$ ♩ | (1) short<br>code     | allegro             |                                      |                   |
| Pavane    | $\frac{4}{4}$ ♩ | (2 or 6)              | andante<br>Moderate |                                      |                   |
| Gaillarde |                 |                       |                     |                                      |                   |
| Rigaudon  | $\frac{4}{4}$ ♩ | 2 pt<br>(3 or 5)      | Moderate            | Similar to<br>Bourrée but<br>slower. |                   |
| Siciliana |                 |                       |                     |                                      |                   |

# LETTERS - AND - ART

LITERATURE DRAMA MUSIC FINE-ARTS EDUCATION CULTURE

## TAKING THE INDIANISM OUT OF THE INDIAN

DANCING HAS BEEN A RELIGION with the Indian for uncounted centuries; but he is given a year to think of some other way of expressing his religious emotions, or else. . . . The threat is left unexpressed, but the Commissioner of Indian Affairs, Mr. Charles H. Burke, has become convinced that the Indian spends valuable time dancing that he might give to industry, and that he gives away too many

that the time "wasted" by the Indian does not compare with the length of the white man's "vacation," and the gifts that seem to Mr. Burke but mere improvidence would not bear mentioning with the lavishness of our Christmas giving. The *Tacoma Ledger* seems to take the order as entirely analogous to an interference with a white man's dances. We read:

"The Commissioner believes that the dances have a bad influence upon the ways of the nation in that they have a tendency to perpetuate the pagan rites of the red men and thus to lead their thoughts away from the benefits of civilization as it is displayed by the white men who surround them.

"Now come the chiefs of the Yakimas with a retort to the Indian Commissioner and this retort would seem to indicate that the noble red man has an observant eye as well as a highly developed sense of justice. If a thing is good for the paleface why is it not good for the Indian, is the question propounded to the federal official.

"You tell us in other ways to look to the white man," say the Yakimas. 'You say farm as the white man does and save your money as the white man does, and the like. When you stop the white men from dancing we may begin to think dancing an evil and will also stop dancing, but why should the poor Indian stop his dances when the white man does not stop his?'

"When the Indian dances there is a separation of the sexes. The movements are individual, passing from stately measure to a condition of positive frenzy. The squaws furnish the music with their tom-toms and while the dances are all symbolic they are never suggestive. Can the same thing be said of the white man's dances, especially in this day of

turkey trots and like jazz terpsichorean performances?

"It is argued that the dance arouses all of the Indian's warlike instincts. That might have been true in the days before the red man had become fully subjugated by the white man. To-day even ghost dances mean no more to the Indian than does folklore to the children of the most highly civilized races. The modern dances in vogue throughout America are infinitely more dangerous to the morals of their participants than could be the tribal dances of the Indian.

"When one considers the defiance of law displayed by so many white men—when one notes the activities of the bootlegger and the moonshiner, one is to be pardoned if he should believe that it is not well for the Indian that he should look too closely to the white man as an example to be followed."

The corn dance and the snake dance of the Hopi Indians are the ones especially singled out as evil. "It is not right to torture your bodies," says Mr. Burke in his form letter, "or to handle poisonous snakes in your ceremonies. All such extreme things are wrong." A letter addressed to the *New York Tribune* by Edith M. Dabb, director of Y. W. C. A. work among Indian



Courtesy of the New York Times.

### OUR ABORIGINAL BALLET.

John Sloan here preserves for posterity the Eagles Dance Ceremonial, now threatened by the Indian Commissioner. Painting in the collection of Frank C. Osborn.

things from the promptings of his ancestral religious nature that he ought to keep for his own welfare. Mr. Burke is a South Dakota man, and knows the Indian from personal contact. But the *Boston Transcript* complains that Mr. Burke "looks at them from the point of view of a race totally hostile to what may be called their Indianism," and is actuated by the effort, once charged against a superintendent of the Carlisle Indian School, that it is "the Government's duty to 'kill the Indian (in the Indian) and put a white man in his place.'" The order of the Commissioner, tho rather vaguely expressed, seems to strike at everything but the Indian's material interests. At least so it is understood by the newspapers that have commented on the matter, nearly all in favor of the Indian and against the Commissioner. The American Indian Defense Society has registered a protest against the Commissioner's stand, saying that the Indians, under this compulsion, "would be compelled to abandon their traditions and religious ceremonies which are as old as the race itself." The *Rochester Herald* points out

girls, interprets the Commission's order from the "Welfare" standpoint. It states in part:

"For at least fifteen years past groups of representative Indians and their friends have periodically requested commissioners to place a ban upon certain ceremonial dances, or certain parts of such dances, and the commissioners have consistently refused to take any official action in the matter. The present letter addressed by Commissioner Burke 'To All Indians' follows this policy in that it is not an order from the United States Government, but a request that the Indians themselves consider what action may be taken by them to suppress the more objectionable features of certain ceremonies.

"Ceremonial dances are of unquestioned interest to the anthropologist and the historian, but the Indian of to-day is no longer the primitive being that once inhabited this country. He is rapidly outgrowing his tribal customs just as the African negro in the United States has abandoned fetishism.

"The *Tribune* has overlooked the fact that many customs connected with these dances, whatever they may have meant to the primitive, are degrading to the Indian living in the world of to-day. Commissioner Burke is a warm friend of the Indians, a neighbor of the Sioux, and understands more thoroughly than outsiders realize the struggle being made by the younger Indians for a cleaner and more self-respecting life on the reservations. It is because the young girls are often the greatest sufferers that the Young Women's Christian Association is especially interested and is eagerly teaching the girls the meaning of healthier recreational activities.

"It is easy to sentimentalize over the passing of customs whose full import is not grasped. But to those who see the Indians as living human beings to-day rather than as interesting relics of a primitive past, there is nothing surprising in Mr. Burke's letter nor in the Indians' request which prompted it."

In the *New York Tribune* Mr. Arthur Chapman writes of the Navajo dances as linked to tribal art, religion and legendary lore:

"Not many white persons have witnessed the sacred dance of the Navajos. If one has seen the dance, which was the writer's privilege, he can sympathize with the Indians in their unwillingness to give it up. The dance starts with the ceremonial of the sand paintings—something typically Navajo. These sand paintings are made in a large, circular lodge, or hogan, under the direction of the shaman, who has the dance in charge. In the dim light afforded by a hole in the roof of the hogan several chosen artists, with little pouches of colored sands at their belts, create the sacred symbols which represent the legendary wanderings and adventures of the Navajo god, who is called *Ya*. The floor is covered smoothly with plain sand, and when the painting is complete the general effect resembles a huge Navajo blanket. Zigzag designs represent lightning, and there are other designs which stand for rivers and mountains and the corn and the pumpkin. Every blanket design, swiftly and artistically made by these sand painters, tells some story of the wanderings of *Ya*.

"The sand paintings occupy the first three days of the ceremonial, the evenings being given over to dancing. After each sand painting is completed and has been duly admired by the Indians it is destroyed with due ceremony and preparations are made for the next one.

"Generally a *Ya-be-ehi* dance is held for the benefit of some sick person, who is brought in to view each painting. The dances continue for nine nights and are different each night. The music is furnished by drums and a chorus. The music is complicated, and, according to the Indian custom, is sung in unison, there being no part songs. There is great rivalry among the choruses furnishing the music. If one wanders about the sand hills of the Arizona or New Mexican desert just previous to a 'big sing' of this sort, he will stumble on a chorus, in some out-of-the-way place, rehearsing just as earnestly as any church choir 'back home.' And when one listens to the complicated measures, sung so perfectly in unison, it is easy to understand why rehearsals are necessary.

"The various teams of dancers taking part in the nine nights' entertainment are likewise well trained rivals. In some of the dances the medicine men appear and scatter sacred meal upon the dancers, dipping the flour from a bowl, and accompanying this ceremony with long intonations. . . .

"The other tribes have dances which mean as much to them as the *Ya-be-ehi* dance means to the Navajo, the few of the tribal dances are as long or elaborate as this ceremonial of our South-



Courtesy of New York Times.

#### THE "ANCESTRAL SPIRITS" DANCE.

Painted by John Sloan, and now hanging in the Museum of New Mexico.

western Bedouins. To see the Pueblo Indians at Taos, for instance, dancing in white robes and with the bright yellow leaves of the frost-touched cottonwood waving in their hands, on the eve of San Geronimo Day, is something at once beautiful and awe-inspiring.

"The bureau that would force the Indians to forego such ancient rituals is indeed assuming a heavy responsibility."

Mr. D. H. Lawrence, writing in the *New York Times* on another phase of the Indian question, pleads for the red man, for "in some curious way it is the Indians still," he says, "who are American. This great welter of whites is not yet a nation, not yet a people." Going on:

"The Indians keep burning an eternal fire, the sacred fire of the old dark religion. To the vast white America, either in our generation or in the time of our children or grandchildren, will come some fearful convulsion. Some terrible convulsion will take place among the millions of this country, sooner or later. When the Pueblos are gone. But oh, let us have the grace and dignity to shelter these ancient centers of life, so that, if die they must, they die a natural death. And at the same time, let us try to adjust ourselves again to the Indian outlook, to take up an old dark thread from their vision, and see again as they see, without forgetting we are ourselves.

"For it is a new era we have got to cross into. And our own electric light won't show us over the gulf. We have to feel our way by the dark thread of the old vision. Before it lapses, let us take it up."

The number of Indians now in the United States is 340,967 approximately the same as when Columbus came.

Columbus found Indian corn and tobacco. The Indians had convertible pipes which could be used for whistles.

The nomadic Indians lived in teepees. The more settled Indians such as the Iroquois lived in large long houses covered with bark.

The American Indians did much weaving (weaving is the first art of primitive people). Their weaving was a straight line and angle process. Later they dabbled their baskets with mud and pottery resulted (Pottery is the second great art of primitive people). Ornamentation followed as a result of the abhorrence of blank space.

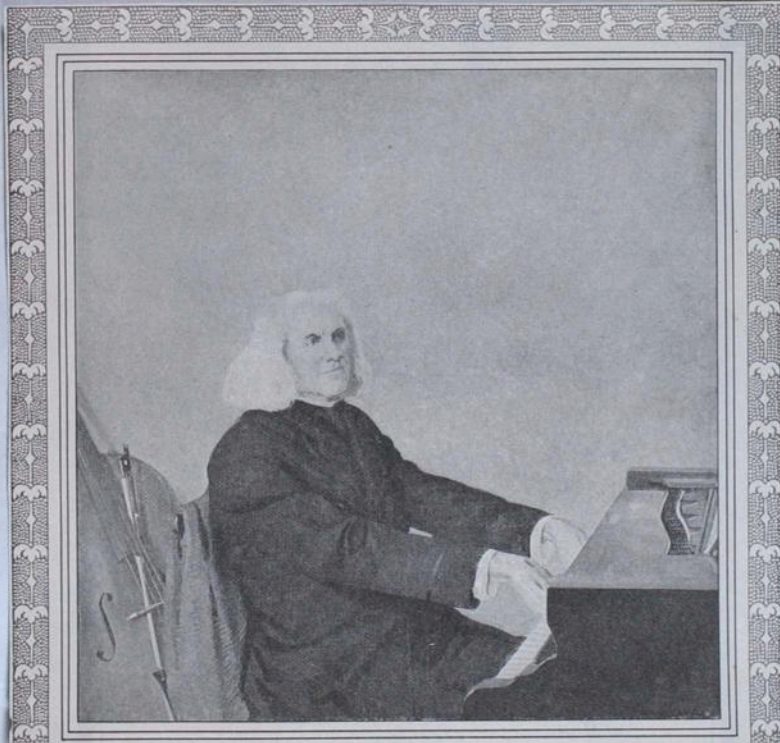
All people have a religious instinct. The Indians believed in a Great Spirit. As with most primitive peoples the sun and moon were chief divinities. However they believed in a being who <sup>must have</sup> created the sun and moon.

The Indians were a tribal race. They always had two kinds of houses. Smaller ones for habitation and larger ones for religious purposes.





*Richard Wagner at his Steinway*



*Franz Liszt at his Steinway*

Digitized by the Hanf Institute for Botanical Documentation

The Indian instruments were (1) the drum used chiefly in religion and also for war. This was made of birch bark much longer than modern drums. It had a mysterious sound which they associated with religions. The drum is still in use as a mysterious instrument. (2) the flute, which was the romantic instrument. (3) the rattle, which was used entirely in the dance. The Indians had a keen sense of syncopation and irregularity of rhythm.

Love, the greatest thing in the world. The Indians had many love songs.

(1) Those of love for Great Spirit.

They appealed to the Great Spirit not to spoil the crops and also thanked the great Spirit for good crops.

(2) Those of love for nature.

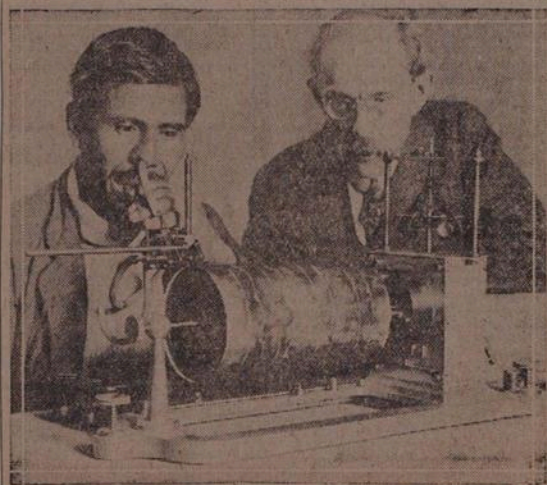
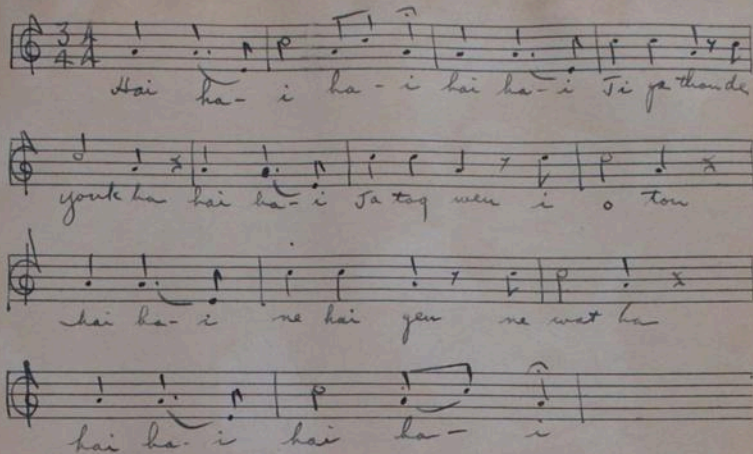
(3) War songs - love of tribe.

Tribal Song Drum + flute.

Love Song. Primitive orchestral accompaniment

Arthur Farwell - Thurlow Lieurance - and Alice Fletcher have done much to preserve for posterity Indian

*Kiawatha.*



**"TAKING A PICTURE" OF THE QUICHE INDIAN LANGUAGE**

Dr. William Gates, of Washington, D. C., President of the Maya Society of America, recording the Quiche Indian tongue on the smoked paper cylinder of the Mymograph (or "wave writer"—widely used for ethnological study) as Cipriano Alvarado, a full blooded Guatemalan Indian, talks into the mouthpiece. Dr. Gates has claimed to have found the key to the hieroglyphic inscriptions of the early Mayas, who were the Indian's forebears and who built the marvelous palaces and cities of which the ruins are found in Yucatan and Central America.



Real Americans visit New York. Five Indian chiefs from Pueblo, N. M., stop off in the big city en route to Washington to defend their rights to their home lands.

# ZUNI HIGH PRIEST



Keystone View Co.

WAIHUSIWA.

Ocean liners travel far from Pueblo lands, but this Zuni high priest of New Mexico is in the East protesting against the Bursum bill. His friend, Mrs. George Heyn, invited him to the ship party held on the Steamship Berengaria, docked at her New York pier. He proved to be one of the lions of the occasion and was intensely interested in the great liner.

## IROQUOIS CHIEFS HERE TO ASK COUNSEL'S ADVICE ON COERCIVE ACT OF CANADIAN GOVERNMENT

Two chiefs of the Iroquois, Chief Deskaheh and Chief Chauncy Garlow, have come here from the Grand river country in Ontario, Canada, to seek the advice of their counsel, George P. Decker. Last Sunday the Canadian government sent troops into Grand river country and quartered them on Indian territory within gunshot of the Indian capitol at Ohsaweken.

The object is to force the Indians to obey Canadian laws, which the Indians maintain do not apply to them as the land they occupy was given them by the English government in the first place and in no way is subject to the rule of others than themselves. Appeal to the League of Nations is being made by the Iroquois through the Netherlands government, which has been given full details of the controversy.

"One of the acts of the Canadian government which the Indians declare is unjust is the purchasing of land by the government from the individual Indians without the consent of the Indian government," Chief Deskaheh said yesterday afternoon. "After the war the Canadian government offered farms to her returned soldiers and purchased several strips of territory from Indians for that purpose. Some of the soldiers could not meet their mortgage and left the farms, which were then worked by Indians who saw them vacant. Now the government is trying to force the Indians off this land.

"We hold that the Canadian government has no right to order us off this territory, as it belongs to the Six Nations. We hold that the individual Indian has not the right to sell land which is part of the Grand river country. Just as the people of the state of California have prohibited the sale of land to the Japanese to keep it under American control, so have we always endeavored to keep our land in the hands of Indians.



CHIEF DESKAHEH.

"We are told by the Canadian government that we must not play lacrosse on Sunday; that we cannot have liquor; and many Indians have been arrested and thrown into jail for breaking laws which we say do not apply to us."

Chiefs Deskaheh and Garlow will remain in Rochester for several days and will attend the meeting of Morgan Chapter, New York State Archeological Society, at the Memorial Art Gallery this evening. George P. Decker, speaking on "The Right of the Iroquois to Home Rule on Both Sides of the Lakes," will sketch the background of events which led up to the present situation.



Chief Big Hat kills a coyote to celebrate his 110th birthday. Dressed in his holiday clothes and wearing the medal given him by King Albert of Belgium. He lives with the remnants of his tribe in the homes once occupied by the cliff dwellers in the Grand Canyon in Arizona.



THIS WAS ONCE ALIVE

What is believed to be the petrified body of an Indian or Mound Builder, has been found in Cincinnati, Ohio, by Duncan Pfau, on the bank of Mill Creek. The figure is of limestone formation, with only part of the body showing. It was first believed to be a piece of rude sculpture, but geologists and chemists have proven beyond a doubt that such formation is the work of petrification. The form was found 15 feet or more below the surface and obviously it had been buried there a long time before white settlers came into that region since the earth there could not have formed by natural processes to that depth over the body in several hundred years.

## AMERICAN INDIAN MAKES GIFT TO AMERICAN LIFE

They Are Temperament, Art  
and History, Head of  
Indian Institute Says.

ONE FROM AKRON SINGS  
Heard at Hampton at Cele-  
bration of Passage of  
the Dawes Act.

Temperament, art and history are the American Indian's gifts to our national life, according to Henry Roe Cloud, president of the American Indian Institute at Wichita, Kan., who delivered the principal address at the public exercises held in Ogden Hall Hampton Institute, to celebrate the passage of the Dawes act, writes William A. Avery from Hampton, Va.

Mr. Cloud, after referring to the present widespread discussion of race problems, stated the method of Jesus. Then he outlined in detail the original possession of the American Indians and the possibility of using them for the benefit of all Americans.

"Solutions of the race question," he said, "are easy to give but hard to follow. Many today advocate migration as a solution. They say: 'Let the negroes return to Africa, the Jews to Palestine, and the Indians to old Mexico.' Jesus worked where He was and bore the burdens of His race. He thereby solved the problems of His race. He solved all race problems. Jesus was energized by love.

### Indian's Nature a Gift.

"The Indian's peculiar nature—his poise, his calmness, his self-possession, and his equilibrium of temperament—is in itself a gift, when he finds himself self-controlled among those who indulge in heated argument. The Indian, living under open skies and on broad prairies, betook himself to meditation and protracted prayer, in which he came to realize the power of the Great Spirit. His mind roamed in vast expanses and got a conception of the majesty of God.

"The Indian has one of the distinctive arts of the world. This art could easily enrich the treasure-house of the nation and might well become the marvel of the civilized world. The Indian can also lend that authority which America needs, because, as compared with the European nations, the people of the United States constitute an infant nation.

"When Michelangelo was patting his

"Last Judgment" and Leonardo da Vinci was painting his "Mona Lisa," the American Indians were in their prime."

Mr. Cloud made a plea that men and women should give themselves quickly to the task of service which requires patience, toil, and suffering in their day and generation. He also paid a tribute to Hampton Institute as "the moral fountain head and intellectual energizer of the Negro and Indian races, which is making all-round character-building the paramount aim."

### Indians Make Good.

Dr. James E. Gregg, principal of Hampton Institute, who presided, in introducing Mr. Cloud, outlined the provisions of the Dawes act, or the so-called "Land in Severalty Bill,"—an Indian Mifra Charter, which was signed by President Cleveland. This act affected 119 out of 100 reservations. He also gave the history of the subsequent Indian legislation, which has made it possible for 200,000 Indians to possess allotments totaling 40,000,000 acres of land and valued at half a billion dollars.

"About 42,000 Indians," he said, "are now farming nearly 900,000 acres of land, as compared with 20,000 who cultivated 550,000 acres ten years ago."

Dr. Gregg read Senator Dawes's memorable letter of March 12, 1887, addressed to the late Dr. Hollis B. Friesell, principal of Hampton Institute from 1895 until his death in 1917. Senator Dawes declared that the new law threw the gate wide open to every Indian to make progress in proportion to his education in farming and home-building. Senator Dawes saw that the important thing was to have the Indian resolve to be a man and to do well one thing at a time.

Dr. Gregg then read a cordial letter of greeting and encouragement from Miss Anna L. Dawes of Pittsfield, Mass., who is the daughter of the late Senator Henry L. Dawes, who worked so successfully for the passage of the Indian citizenship bill and who became the head of the commission that carried the bill into action.

Roland B. Sundown, a Seneca Indian from Akron, N. Y., dressed in Indian costume, sang in his primitive form a song—"The Dancers Will Join Hands"—for which an elaborate version has been provided by Charles Wakefield Cadman. This song, called "White Dawn Is Stealing," was sung by Pearl E. Howe, a Sioux Indian from Fort Thompson, S. D.

songs and melodies.

Indians sing in unison. All primitive peoples have a feeling for harmony but no knowledge of it. When transcribing Indian melodies and adding harmonies the Indian must be consulted if we would get harmonies to suit his ear. The Indian scale is the pentatonic scale - 1 2 3 5 6 of our major scale.

There is a significance in all Indian dancing. Their dancing is an expression of their emotions.

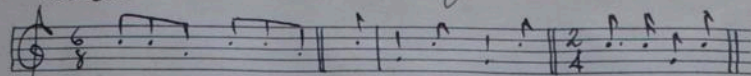
They have many animal societies, each of which has its own ritual generally including dances suggestive of the animal after which the society is called.

The Indians use many and varied face faces in their dances. These dances contain the element of pantomime.

Their medicine men are not only physicians but priests as well, who are master hands at all of the dancing and religious functions.

Thrush.

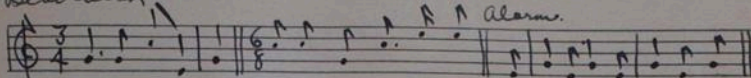
Bird Songs.



Sparrow.



Blackbird.



Alarm.



ABOVE—NATIVE DRESS OF THE SENECAS. Members of the Seneca Nation on the Tonawanda Indian Reservation near Batavia posed for this picture to show the various types of costume worn by members of their tribe and nation.

## REAL AMERICANS



ABOVE—Ho-do-i-wa-ge, otherwise Charles Kennedy, and his family in full costume. LEFT—Nicodemus Billy, one of the well known men of the Tonawanda Reservation, for years a leader in better farming and other progressive movements.



LEFT—Mike Fish, every inch an Indian, wearing the regalia of a chief of the Senecas. RIGHT—Invoking the Great Spirit. The Indians believe in a Supreme Being, the Manitou or Great Spirit, who controls the universe.



THE FIRST FLYING MACHINE. In native dress these red men are enacting some of the historical epochs of their race.



ABOVE—DRESSED for festivities. The Indian woman is an adherent from her white sister in her liking for beads and trinkets.



ABOVE—THE FLYING MACHINE. In native dress these red men are enacting some of the historical epochs of their race. RIGHT—INDIAN FLAMERS. Women of the reservation attired in their best Indian dress.



# OLD INDIAN DANCE WANES AS YOUNG REDS LEARN NOT

Ancient Custom Recalled to  
Tribes of Time Their Wild  
Deeds or Attacks.

## ONLY A WAR DANCE NOW

Indian of To-day Puts in All  
His Time to Acquire in  
Their Dance Halls.

Dancing is as old as man, for all we know it may be older, so we are not surprised to hear that the Indians danced and dance. It is the dancing itself that has always excited our curiosity.

We will never see a genuine dance of the central California Indians, for their only dance was the war dance. All of the Indians are sure of that.

"We dance only the war dance, even when we come together in peace for a big time. We don't know why, but we dance only the war dance."

They dance a reproduction of the war dance once a year for the big time in Yosemite valley, but it cannot be the real war dance, as it was years ago. The pep and ginger is gone from it. It has come to the level of the curious and the interesting now.

A long time ago if you lived near an Indian camp, every now and then something or other would recall the good old days to some warrior whose civilization was not as thick as his skin. Without a word of warning, if he thought himself unobserved, he would burst forth into what they call song, and time the tune with various antics, emblematic of the deeds of prowess of his youth or some one else's, that the haphazard occurrence had brought to mind.

One of the old "timereeses" of the hills remembers one bright spring day seeing a perfectly peaceful, jolly old Indian going through every gesture of pursuing, catching and cutting the throat of some despised enemy, and to all these convolutions he chanted some savage-incarnation is probably a better word than melody, although unquestionably it was melodious to him. He said the sight of his neighbor riding down the opposite hill on a black horse "brought the happy time back again."

### Chief Followed.

But a silence overcame him, when it came to reminiscing about the detail of the happy time. All such little episodes, and each warrior danced through many of them, gave the intimate, personal touches that added greatly to the pleasure of the war dance. They followed their chief, the leader, just as they did on the warpath and in the village councils, but in little things each person could follow according to his own lights.

In the olden days the warriors that

keep a long and lasting peace. The young ones are following but they are doing it in a different way. Nothing could better exemplify their attitude than:

"When the old dancers die there will be no real Indian dancers left."

The young Indian no longer puts in all his time learning to dance the war dance in the smoke of the roundhouse fire, but he fox trots to the music of an Indian orchestra in the dance hall the Indians built. The dance halls are quite numerous and are becoming more so every day.

The Indians "get together" to build them. They have no more trouble getting together for that purpose than they used to have to build their council houses. It is all done while we would be forming a committee to buy the lot. It is always built on some Indian's property and there seems to be no danger that he or his would claim the dance hall for their own. Such a contingency might arise in our world.

### Violin Main Instrument.

The orchestra consists of violins, because the violin can be made at home, more easily than most other instruments—it is startling how many fairly good violins are made at home in the hills out of bull pines. They also like the violins because so many of their "friends" are Spanish and can show them how to play." The orchestra is rarely if ever paid.

"If they need the money very badly, we pass the hat. Some people put in nothing and some put in 10 cents and some put in a quarter." No Indian is ever charged admittance. All the fun is free to rich and poor alike, but if the whites want to come in they got to pay a dollar, just like they do for theirs.

More and more of the Indians big times, meetings and tribal gatherings are being held at the dance halls. The Indians sit in rows facing the speaker at the back of the hall, instead of in a circle in a rounded house around a smoking fire. The dance hall was the nucleus of the tribe, the starting point of their councils, the corner stone of the religion that was theirs. The dance hall has changed and the dance the religion and the council, but the fact is still the same. All the social life of the Indian begins in the dance hall with the dance. It is there that they meet and after the dance discuss the burning questions that grip the tribes as silently and as insistently now as they ever did.

But the old roundhouses with the floors pressed down by the stamping of the dancing feet of old are empty and

the earth is cold in the center where the ashes used to glow. The air no longer quivers to the beating of naked feet and the quaint wailing song of the squaws, as the warriors swept around. But the Indians are dancing as enthusiastically as they ever did. They are dancing our modern dances to the strains of a violin.—Fresno Republican.

### RED MEN AS WOOD CARVERS.

Many American Aborigines Were Experts, Specimens Show.

It has been pointed out that the chief reminder of our aboriginal life is the woodwork and bone carving of the Indians of the Pacific Northwest. While the cities of that region are enterprising and important centers of industry, and while the inhabitants of many Indian reservations have adopted the latest farming methods and have become prosperous agriculturists, there remain some primitive worker whose wooden products have the same quaint appearance as those of their ancestors generations and generations ago.

When they possessed no better tools than stone axes and bone handed implements, before the white man had brought his iron instruments to this country, these Indians were experts at their chosen profession. With their crude implements they cut planks four feet wide by ten feet long from a tree. Many specimens of their carving in wood, bone and ivory, preserved now in museums, show considerable skill. Their canoes, hewn from a single log, were fifty feet in length, as a rule, and caused great astonishment among the first Europeans that came to this country.—Exchange.

## Indian Music.

This is the Nationalistic period of Music. The Foundation of Nationalism is the folk song which was primarily of the pentatonic scale. (The leading tone is the youngest of the scale but the flat seven one of the oldest).

Indian songs consist of one melody repeated and repeated. There music is characterized by a tom tom rhythm and a bass consisting of an open fifth tone and dominant.

C. W. Cadman and Thurlow Lawrence have practically devoted their lives to the preservation of Indian Music.

Characteristic marks in Indian style are

From an Indian Lodge, Max Damm  
New World Symphony Quartet.  
American Quartet " "

Talk song is the basis of all music.

Mythology says music came from the gods.

With the birds we find real music.

Music came before speech in the form of whistling to imitate the birds.

Every melody is made out of a figure and motive. (We find this in all bird songs).

Nature has taught man the elements of music.

The birds instructed man,  
And taught him songs before his art began,  
And while soft evening gales blew o'er the  
          plains

And shook the sounding reeds, they taught  
          the swains,

And thus the pipe was framed  
And tuneful reed.

Lucretius.

Seven necessities of Fiction, Reality,  
Ideality, Impartiality, Impersonality,  
Purity, Humanity, Chivalry.

Seven virtues of Green & Co.

## Mystic Seven.

The seven planets  
Sun Moon  
Mercury Venus  
Mars Jupiter  
Saturn.

Seven has always played a large part in the religious sciences arts etc of all people. The use of this number probably became popular because of the seven planets known to the ancients. The number of days in a week is due to this - each day being named after a deity who was named after a planet. The days with their derivations are - Sunday (the day of the Sun), Monday (the day of the Moon) Tuesday (Jupiter's day), Wednesday (Mars's day), Thursday (Thor's day), Friday (Venus's day) Saturday (Saturn's day).

Seven may also have taken on an added significance because of the seven colors. The Chaldeans built temples which consisted of seven tiers one upon the other, growing smaller toward the top with a chapel on the top one. Each tier was dedicated to a day of the week and each had its own color.

Other important sevens are, The seven virtues - faith, hope, charity, prudence, temperance, chastity fortitude; the seven arts grammar, logic, rhetoric (these

three constituting the triduum) and arithmetic, music, geometry, astronomy (constituting the quadrium); the seven seas - the Red Sea, Black Sea, Mediterranean Sea, Caspian Sea, Sea of Aral, Dead Sea and Arabian Sea; the seven hills of Rome - Palatine, Capitoline, Quirinal, Coelian, Aventine, Esquiline, Viminal; and the seven wonders of the ancient world - the Pyramids in Egypt, the Pharos of Alexandria, the Hanging Gardens of Babylon, the Temple of Artemis at Ephesus, the Statue of Olympian Zeus by Phidias, the Mausoleum of Artemis at Halicarnassus and the Colossus of Rhodes.

But most important to us are the seven tones of the scale - tonic, supertonic, mediant, subdominant, dominant, submediant, and leading tone. Also designated by numbers 1-7, letters A-G, C-B. Syllables, do, re, mi, fa, sol, la, ti, colors, red orange yellow green blue violet indigo, by mood constancy, desire, care, faith, power, adversity, brilliance, and by vibrations.

## LECTURE V

## THE RACES OF MANKIND

*Homo Sapiens*—1,500,000,000—(+150,000,000)

Scientific Ethnology— I. BROWN - (Yellow) - 650 millions - Mongoloids (Chinese, etc.- Am. Indians).

II. BLACK - (Brown) - 200 millions - Negroes (Africa, etc.)

III. RUDDY - (White) - 650 millions - Caucasians - (Hamites, Semites, Japhethites).

(a) Linguistic— I. GANOWANIAN ("bow and arrow") and URAL-ALTAIC (Turanian—"Horsemen") - monosyllabic-agglutinative.

(Ruddy) } II. SEMITIC ("name") - trilateral system, little inflection.

III. ARYAN ("plow" "noble") - Inflection - [Zend, Sanskrit, Keltic, Greek, Latin, Teutonic (+ Anglo-Saxon), Slavonic.]

(b) Historical—III. INDO-EUROPEAN [Media-Persia: India: W. Europe: Greece; Italy (France-Spain): Germany, Scandinavia, Great Britain, United States: Russia, Servia, Bulgaria, Poland, etc.]

II. SEMITIC-Arameans, Assyrians, Hebrews, Arabs.

I. HAMITIC-Akkadians, Egyptians, N. Africans.

(c) Biblical—Ruddy race only - *Genesis X* - Noah=Ham, Shem, Japheth.

| THE ZONES                             | THE AUTOCHTHONES                                      | THE STONES                                                                                                 | THE TONES                   |
|---------------------------------------|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------|
| EURAFRICA<br>etc., etc.<br>(Glaciers) | -Quaternary Age-Paleolithic<br>-Fishermen and Hunters | Chellean-unshaped flints<br>Mousterian-unpolished tools<br>Magdalenian-arrow heads<br>( "reindeer" period) | ?<br>?<br>ART<br>-The flute |
|                                       | Neolithic<br>Shepherds and Farmers                    | Kitchen middens-Menhirs<br>Dolmens, Cromlechs<br>Pile Dwellings-polished tools                             | ?<br>?                      |
|                                       | Agriculture-Pottery-weaving-cattle                    |                                                                                                            |                             |

## THE BRONZE AGE — THE IRON AGE

|         |                                                                                                                                                      | Historical                                                    |                                                               |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| AFRICA  | Bushmen: Madagascar: (Hottentots)<br>Negrilloes: Negroes (Pygmies) (Bantus)                                                                          | SEMITO-HAMITES<br>Arabo-Berbers-EGYPT<br>Ethiopia-Abyssinia   | Painting                                                      |
| OCEANIA | Malaysia-Australia-Melanesia-Polynesia                                                                                                               | Architecture-Sculpture                                        | Music                                                         |
| AMERICA | Eskimo- N. A. Indians-<br>mounds-cliff dwellings<br>Mexico and C. A. Indians<br>(Mayas-Aztecs)<br>S. A. Indians (Incas)                              | Tombs-Temples                                                 |                                                               |
| ASIA    | Tartars Turks China Indo-China Armenia<br>Ainus Mongols Japan (Burma-Siam) Assyria<br>Manchus, etc. Tibetans Corea India Babylonia<br>Arabia Chaldea |                                                               | Persia (Iranians)<br>Syria<br>Asia Minor (Semites and Aryans) |
| EURASIA | AnAryan                                                                                                                                              | Aryan                                                         | Caucasian (Georgians, etc.)                                   |
|         | Basques                                                                                                                                              | (a) -Celts { Gaels<br>Bretons                                 |                                                               |
|         | Lapps and Finns                                                                                                                                      | Hellenes-Greeks                                               |                                                               |
|         | Hungarians                                                                                                                                           | (b) - Latins-Romans { Italian<br>Spanish<br>French            |                                                               |
|         |                                                                                                                                                      | Teutons { Germans<br>English<br>Americans (U. S.)             |                                                               |
|         |                                                                                                                                                      | (c) - Slavs { Russians<br>Poles<br>Servians, Bulgarians, etc. |                                                               |

## EUR-AS-AF-MERICA

The beginnings of civilization. The Patriarch—family, clan, tribe. Pastoral life—the Nomad. Discovery of building materials, fixed abode, tribal commerce, the rivers.

Language—1. Pictures of objects. 2. characters for names of picture writing. 3. Initial sound of the name. Syllabary. 4. Phonetic sound only retained=alphabet Cuneiform (wedge). Hieroglyphics.

Art—symmetry - ornament { straight line. Representation { Animal { round  
curved line. relief  
broken line. Human drawing  
Vegetation

Music—Instruments—Wind, Percussion, Stringed.

Scale—Indefinite, Pentatonic (5), Diatonic (7).

Melodies—Short phrase, Repetition, Rhythm.

Chant, Hymn, Folk song and dance.

## The Race of Mankind.

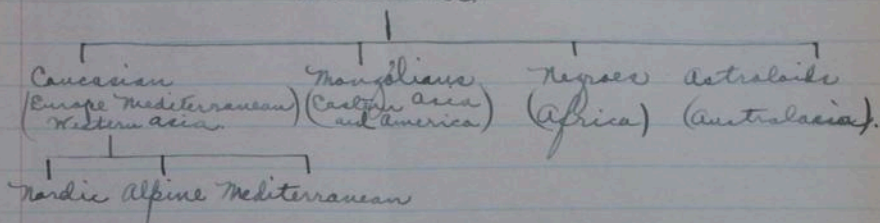
There have always been at work two forces - one tending to separate men into different species - the other tending to unite these species before they are distinctly established. The wandering instinct of man tended to help the farmer and agriculture the latter.

Paleolithic man ranged widely and was uniformly distributed. For this reason Paleolithic remains are strangely similar.

Whenever one finds a strongly marked local difference of conditions and a check upon intermixture one finds the seat of a new variety of man.

Certain main barriers such as oceans, deserts, etc., have tended to differentiate peoples. There is no proof that peoples in widely separated sections, who appear to have had a common origin, did have such - the proof existing is that they have lived for vast ages under similar conditions. Man has never differentiated into different species - only into different varieties.

## Mankind.



It is possible that the basic peoples of our modern world were the Mediterranean or Iberian division of the Caucasian race which extended eastward even into China and the influences of which extended perhaps as far as Mexico and Peru. This proposition is based on the fact that a certain group set of practices is found among primitive peoples occupying this belt. The Nordic and Mongolians do not exhibit this same set of practices.

## The Languages of Mankind.

There was no one primitive language. Primitive man is believed to have talked little, his narratives being told by dancing, gesture and the like. He also probably had a few words which served for many by giving them different inflections of voice.

The Aryan group of languages now

Van Shanon

#### ARYAN LANGUAGE.

##### Wandered Far From Home Between India and Western Europe.

In its distribution from India to western Europe it must often have wandered far from its original home. Its introducers must often have been few compared with the large and dense populations among which they came. The Aryans could hardly have been more than a handful among the people of India. Something similar may be said of its introduction into Europe about the close of the Neolithic period. Middle Europe was at this time fairly well populated, at least in its more fertile regions. The bearers of the new language must have represented a ruling, conquering, or otherwise very influential class, else it would never have been accepted by the mass of the people.

When the original or modified Indo-European language, perhaps in several different dialects, was introduced into Europe, it was carried to people of several or many stocks and languages. These had to learn and acquire it as we acquire a foreign language, but only as a spoken, unwritten language. Probably no one of them acquired it exactly in its original form. It was almost impossible for them to pronounce all its consonants or combinations, its "shibboleths." They retained much of the stress and accent and more of the cadence of their own tongue. Similarly at a far later date Latin developed into the various romance languages of modern Europe.

Under the new conditions content and meanings changed as well as forms of language. Words little used in the new home, especially names of objects, might easily be lost, while others would be replaced by favorite apt words from the aboriginal language. A name might be applied to a new object and thus change its meaning. To cite a familiar modern instance, the robin redbreast of America is quite a different bird from that of England. For a long time it was supposed that the occurrence of the root of the word "beech" in the European languages proved beyond doubt that the language must have originated in a region where the beech tree was common. But the Greek word derived from the same root means oak; a similar, perhaps not the same, root word in Kurdish means elm. Our knowledge of the original meaning of the words is very uncertain. Though all the languages there runs a single word for weavers or plaiting, but whether the original word refers to the weaving of cloth or to the plaiting of mats and baskets we do not know.—John M. Tyler, in "The New Stone Age."

covers nearly all of Europe and reaches into India. All these languages are variations of a fundamental language. However this fundamental language was in its earliest form far above the means of expression of the Later Paleolithic people and early Neolithic Kitchen-midden people. The original Aryan speakers were of Nordic race.

The next group of languages is the Semitic which contains Hebrew and Arabic. This group contains entirely different roots from the Aryan group. The Semitic speaking peoples were of Mediterranean descent.

The third group of languages is the Hamitic. There is considerable doubt whether this language is distinctly separate from the Aryan and Semitic groups. It may be that all three are derived from a common proto-Hamitic. The Hamitic speaking peoples live in Northern Africa and are Caucasians.

There is a fourth group to the north-east of the Aryan and Semitic - the Ural Altaic including Lappish, Finnish, Turkish, Manchu and Mongol. There is little as yet known about this group.

There is also the Chinese group. These languages consist of a number of monosyllables which receive many inflections of voice. The method of thought in these languages is entirely different from that in the above mentioned languages.

There also exist several great language families very far from the others widely. They were developed in sections practically isolated from each other and the afore mentioned language groups. They are the Bantu in Africa, the Dravidian in South India, the Malay-Polynesian in Polynesia and the Amerindian languages in America. The latter is a group of miscellany rather than a family. <sup>th</sup> None of the above mentioned languages could have been a common primitive language. At the present day there are found in different places remnants of very old languages which might have been one and the same language and that the primitive one.

The Hottentot language of South Africa seems to be related to the Hamitic languages though it is now separated from them by the whole of Bantu-

speaking Central Africa.

The Tasmanian, which is now extinct is said to have consisted mainly of concrete terms used with inflections of the voice. The meaning was usually also made clear by putting some action to the word.

OCEANIA



## The Islands of the Pacific

All primitive <sup>musical</sup> instruments can express much emotion. All instruments must evolve. Primarily all instruments were percussion. Strings were first twanged for rhythmic purposes.

The instruments of the South Sea Islands are grotesque with much carving and ornamentation. There is great individuality among their instruments which is influenced by the material used. Reeds can be cut in strips and used for strings, also as a whole for flute purposes. Extensive use of feather ornamentation is made. (Kettle drums are the highest forms of drums).

The first age of mankind was the Stick Age. Sticks were used for musical instruments, for fire and making fire, etc and were very and indispensably useful.

Sense of hollowness in drums. Mysterious reason for the drum being the universal primitive religious instrument.

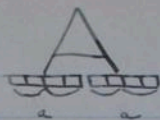
Primitive music has but one melody. Monotone - variable quantity. Monotone followed by a pause followed by another monotone and a pause.

chant. — ( — ) — . A group of pitches takes one from chant to melody.



FILIPINO MUSICIANS

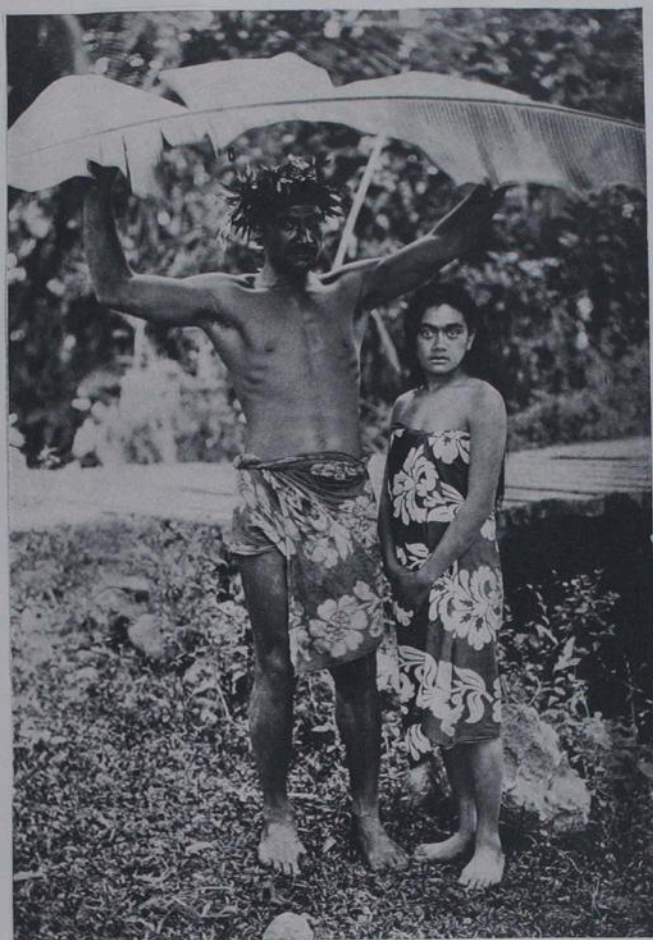
Tune in melody.



Pano pipes give us a scale.

The primitive people and present day people of the Island of the Pacific used reeds, logs, gourds, metal, and square pipes for musical instruments.

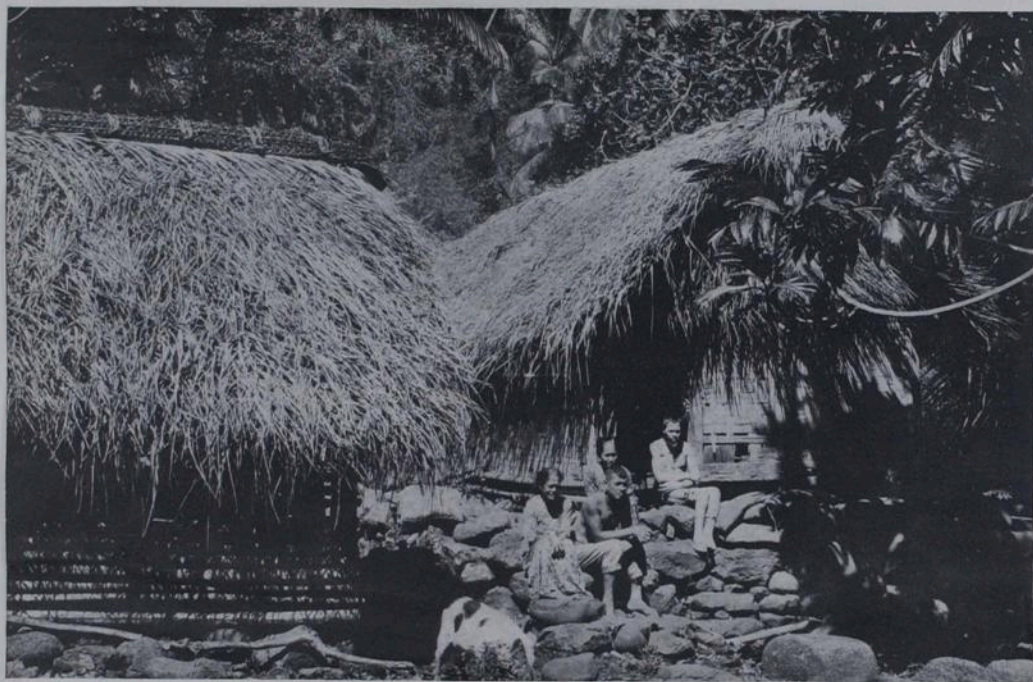
The violin originated here and went from here to Asia and thence to Europe.



Photograph by L. Gauthier

NATIVE TAHITIAN MAN AND WOMAN

" . . . Strong is the wind, and strong,  
And fruitful, and hardy the race, famous in battle and feast,  
Marvelous eaters and smiters."—*Stevenson*.



A MARQUESAN HOME ON THE ISLAND OF TAHUARA

Photograph by John W. Church

The sides of the hut are made of breadfruit saplings and split bamboo, the roof a thatch of coconut-palm fronds. The forefathers of these sickly, somber-faced natives were fierce, cruel cannibals, whose chief occupation, aside from the indulgence of their amative proclivities, was the killing of both men and women of other tribes. The bodies of their enemies were served at feasts in the sacred groves of the islands.



A WEAVER OF SANTA CRUZ, LA PEROUSE ISLANDS, SOUTH PACIFIC OCEAN

The mats and "dilly" bags made by these men of cannibalistic forebears are among the most beautiful articles produced in the South Sea Islands. The patterns and designs reflect much ingenuity and are woven into the piece with a flax which has the lustre of black silk.



ALL TATTOOED UP AND NO PLACE TO GO.

This Dayak dandy wears on each leg five silver rings and many small rings braided from the fiber of an indigenous palm; he has a fine bead necklace with silver buttons; his head is crowned with an elaborate millinery creation, in which is thrust a hornbill feather. Silver bracelets and a parang, or short sword, with a beautifully carved handle, complete his resplendent regalia.



Photograph by Perkins

TWO FISHERMEN AT KEALAKEKUA BAY, HAWAII, WHERE CAPT. JAMES COOK DISCOVERED THE ISLANDS IN 1778

## Africa and Madagascar.

Pure negro spiritual came only from Africa.

The lowest civilization (Tasmanian) has just been wiped out. They had no music or musical instruments.

The stringed instruments of Africa are only imitations of stringed instruments of civilization.

We are concerned with the Africa Livingston knew.

Madagascar.

Large and small drums.

Xylophone marimba (pinus forte).

All primitive peoples have complicated rhythms.

Madagascar have of marimba and complicated rhythms.

Musical that missionaries take to Africa is inferior to that of the natives.

Tattooing, decorating bodies, much drawing no perspective.

All primitive music alive.

Stringed instruments also originated in Africa from women twanging bow ~~and~~ strings.

## The First Civilizations (Mills Chap. XIV.)

At Nippur the earliest civilization 5000-6000 B.C.  
The first civilizations of Egypt and Mesopotamia may have arisen from separate sources or they may have arisen from a common source in Southern Arabia and the Red Sea.

Civilization is settlement on continuously cultivated and possessed land, building continuously inhabited and a common rule and citadel. The necessities for this are good water supply, building material, fertile ground etc. All these needs must be supplied in one place. These conditions found best only in the Tigris-Euphrates and Nile Valleys.

Nomadic peoples sprang up in less favorable places. There was constant strife between settled peoples and nomadic peoples. Combined tribes of nomads conquered settlements and absorbed civilization.

First civilization was that of Sumeria in the Lower Tigris Euphrates Valley.  
Irrigation - cattle, sheep, goats - mud huts.  
Tower like temple buildings.

Much use of clay.

Writing on clay tablets.

Uppur (Tower of Babel).

Existed a very long period unmolested by other peoples. (Much strife among themselves). Priests. First empire from the Persian Gulf to the Mediterranean.

2750 B.C. Sargon united the Semitic tribes and conquered the Sumerian Empire. This empire lasted 200 years. These Semitic peoples absorbed the Sumerian culture.

2100 B.C. Hammurabi (Assyrites) conquered the Sumerian Akkadian empire and set up the first Babylonian empire.

Higher upon the Tigris a Semitic people, the Assyrians, settled. They were of a peculiar type. Their city was Nineveh. They were a military nation and after much warring and intriguing they conquered, under Tiglath Pileser the I, Babylon in 1100 B.C., but retained Nineveh as capital.

Another race the Syrians arose between Egypt and Assyria.

In 745 B.C. Tiglath Pileser III arose and conquered Babylon and directed the transfer of the Israelites to Media. His successor an usurper took the name

of Sargon II. He armed the Assyrian forces with iron weapons. Deportation was a political method of Assyria.

Sennacherib led Assyria to the borders of Egypt. They were there smitten by a pestilence. His son Assur-bani-pal did <sup>not</sup> succeed <sup>in conquering</sup> and holding for a while lower Egypt.

Assyrian empire lasted only 150 years after Sargon II. The Chaldeans assisted by the Medes and Persians conquered Nineveh in 606 B.C. The Chaldean empire (and Babylonian) lasted under Nebuchadnezzar, the great, (II) and his successors to 539 B.C. It was then conquered by Cyrus of Persia.

Parallel with the beginnings in Sumeria were beginnings in Egypt. Egypt was protected from the nomads by the desert and sea. There is not much know of prehistoric peoples in Egypt.

5000 B.C. true Egyptians appear.

Their culture quite different from Sumerian.

Clay not good for writing so they used papyrus.

Reign divided into 31 dynasties.

IV Dynasty of the Large pyramids.

IX-XV conflicts between capitals and religious.

XVI Shepard Dynasty (Hyksos) nomadic  
Semitic - finally overthrown 1650 B.C.  
Now power extended to the Euphrates  
and conflict between Egypt and Assyria  
began.

XVIII Egypt on top. Great building. Karnak  
and Luxor.

Brief Syrian conquest.

XIX Ramses II (Bible) 1317-1250 B.C.

XXII Shishak (plundered Solomon's Temple 930 B.C.)

XXV Ethiopia this fell before Tiglath-Pileser  
III in 670 B.C.

XXVI Native rule restored. Fell again to  
Nebuchadnezzar II along with the Jews.  
Then to Persians, independent again,  
then to Alexander the Great, the Greeks  
the Romans, the Arabs the Turks and  
finally the British.

### India.

Dravidians developed in the Ganges  
Valley. Not such a high development.

Few monuments, no writing. Conquered  
by Aryan-speaking peoples.

Warring kings and republics. (No unity)  
Conquered by the Persians and Alexander  
the Great.

## China

origin of Chinese civilization doubtful  
Hwangho and Yangtze River valleys.

Group of city states.

2700 - 2400 B.C. Five Emperors

Shang Dynasty 1750 - 1125 B.C.

Chow " 1125 - 250 B.C.

Then these dynasties more or less loosely  
feudal. More religious than political  
union.

Iron entered about 500 B.C.

Tsin Dynasty 250 B.C.

Shi Hwangti (Alexander Great) built  
Great wall and successfully opposed  
the Huns.

Han Dynasty.

By 100 B.C. they began to learn of  
other civilizations and to carry on trade  
with Persia and India.

During all this time the East Indies  
were practically uninhabited

## North America.

A group of Mongoloid tribes grad-  
ually drifting southward.

Developed two important civilizations  
in Peru and Mexico.

Used bronze, copper, gold and silver but no  
iron.

Primitive picture writing.

Maya had a primitive script.

Communication in Peru by means of  
knotted strings.

Peruvians and Mexicans knew nothing  
of each other in 1500 AD.

America 6000 years behind the old  
world.

## Lecture VI.

### THE "KINDERGARTEN" OF THE FINE ARTS.

Lower Mesopotamia, "the land between the rivers" (gr)—Aram Naharum (O. T.)

*The Euphrates and Tigris (Hiddekel). The Araxes (Gihon?) and Halys (Pishon?).*

Sacred myths and legends of the creation, etc. The garden of Eden (H. "pleasure." B. "park." Location. "Enoch," the first city. Jubal the musician, Harp and pipe. Gen. IV, 21. Noah, ("rest," "comfort.") The deluge. Armenia (Havilah?) and Mount Ararat.

The sons of Ham—CUSH (Kish to Ethiopia). MIZRAIM (U. and L. Egypt). PHUT (Phoenicia), and CANAAN ("lowland").

The sons of Shem—ELAM, ASSHUR, ARPHAXAD (g. S. EBER, S. JOKAN), LUD, ARAM. From Armenia to

### CHALDEA.

Kaldu—Kashdu—Kengi, "The Land of Canals and Reeds" (*Pishon and Gihon—Delitzsch*)—Modern Irak—from?—7000 B. C. to 1300 B. C.

The Persian Gulf—former dimensions. The fertile alluvial country—wheat, barley, fish, game. The date palm, its beauty and usefulness. The plane tree—tamarisk—manna—the Reeds—clay—sand—bitumen, (Hit)—builders and cultivators—canals—irrigation.

The races—AKKADIANS (Turanian?) CUSHITES—(Cosseans)—Kasshi? ELAMITES ("high-lands") SUSA (the first city?) ARYANS. Mingling of the sons of Ham and Shem.

GEN. X. Nimrod the Cushite. The cities of SHINAR (Sumer) and AKKAD.

1—NIPPUR (Niffer) or Calneh—[Layard, Rawlinson ('51-'54). Wolf Expedition, '85. Dr. Peters, University of Pennsylvania, '89-'91. Hilprecht, '98-1900]. The first city (?) The first religious center. The oldest temple (E-KUR). The god En-lil (the oldest Bel) and Belit—sacked by Elamites—rebuilt by King Sargon (3800 B. C.) (S) NARIM-SIN. U-GUR (2800) (B. C.), Cossean Kings, (1300 B. C.) and ASSHUR-BANI-PAL (630 B. C.) of Nineveh. The *Shatt-en-Nil*. Nimrod's city. Tablets—60 000.

2—ERECH (URUK, Warka, [Loftus, '55]. The first capital. K. LUGAL-ZAGGISI of KISH ("land of the bow." 4000 B. C. Temple of Ishtar ("evening star,")—gods Anu (heaven—supreme) and Nana (E-ana temple, "house of heaven")—sacked by Elamites. College of Priests—library—source of ASSHUR-BANI-PAL's library at Nineveh. Vast Necropolis.

3—UR—(Mughair "bitumened"). [Taylor, '54]. Second capital. Temple of Sin (moon god), later Anu. King UR-GUR—2800 B. C. Temple builder. The city of Abraham.

4—ERIDU—(Abu-Shahrain)—god Ea ("Ocean," "Jah," "wisdom.") [Taylor] "good" city.

5—LAGASH or SIRGULLA—(Tel-Loh). M. de Sarzec, '77-'94. Third capital. The *Art Centre*—8 statues of Gudea (3800 B. C.) in Louvre. Tombs—Coffins. The *Shatt-el-Hai*.

6—LARSA—(Ellasar-Senkereh)—Shamash (San) the sun god. K. Arioch.

7—AKKAD—Agade—Sepharvaim, the "two Sipparas." [II. Rassam, '81.] K. Sargon, 3800 B. C. (S) NARAM-SIN—3750—"Shamash" Temple.

8—BABEL—BABYLON, "gate of God"—2300 B. C.—Bel-Marduk (Merodach) and temple Esagila, "high towering house"—last capital. BORSIPPA—(Birs Nimroud). NEBO and temple Ezida, "eternal house"—Tower of Babel.

Elamite Supremacy, (2300-2076 B. C.)—Median Dynasty of Bocrosus (300 B. C.)

KHUDUR-NAUKHUNDI—2280 (?)

KHUDUR-LAGOMAR (CHEDOR-LAOMER)—2250 B. C. The Elamite conqueror. Makes Babylon the capital.

Abraham (ABU-RAMU, "exalted father") leaves UR—Gen. XIV. 2250 B. C.

Riaku (Arioch) K. of Larsa—an Elamite (2200 B. C.)

The mounds (tells)—platforms. ARCHITECTURE—domestic; reeds, mats and mud. The temples—(Ziggurats)—thick walls—no windows—stairs outside, 3-7 terraces. Tombs (dish covered, cylinder, vaults, slipper)—brick, (sun dried, burnt, enameled—stamped. Pottery—tiles—drains—cones. Clay tablets (double inscription.) Papyrus—signet cylinders (barrel). Bas-reliefs—drawing—statuary—gem engraving—weaving.

The cuneiform (cunei=wedge) writing developed from pictorial hieroglyphics of the Akkadians. Vast literature.

Science—astrology—astronomy—festivals—the mystic number 7—Stringed musical instruments. Lute—Lyre—Harp—Dulcimer. The Hymn. The Diatonic Scale.

## The Scindergarten of the Fine Arts.

Primitive peoples never grew.

Basis of human society is primitive race that developed mentality.

Facts of the Bible are being confirmed all the time by archaeologists.

Ethnology - study of primitive tribes still existing.

Archaeology - study of extinct peoples.

Three perfect things - Bees, Man, Birds.

As man becomes civilized arts differentiate.

Sumeria (Ancient Chaldaea).

Oldest civilization - Tigris and Euphrates.  
Cradles of civilization, the Nile Valley and the Valley of the Tigris - Euphrates.

The world mentioned in Genesis is the Valley of the Tigris - Euphrates.

The flood was the overflow of the Tigris - Euphrates.

These rivers are lined with man made hills which contain the ruins of ancient cities. These cities contain temples and smaller buildings and many graves.

What originated in this district.  
Here was the Garden of Eden where

all wants were easily supplied.  
The seven tone scale is Chaldean (7 days)  
(7 planets) (7 divinities).

Five is nature's number. The pentatonic scale  
close to nature.

Adam (first group of men)  
Eve ( " " " " women).

Noah (group of people).

The Bible has been confirmed but our  
attitude has been enlarged toward it.

Ararat was their highest mountain  
and was, therefore sacred.

Chaldea was very fertile if irrigated.  
Wheat and barley raised here. Date palm.

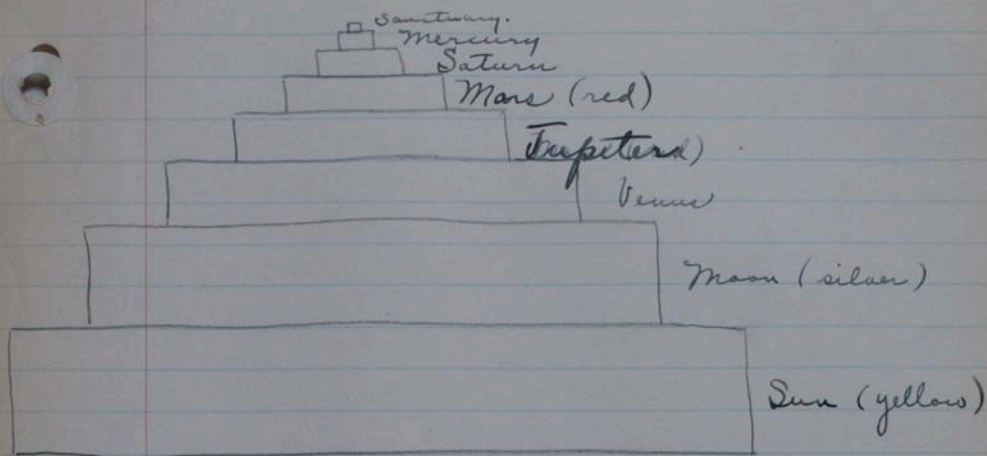
Cradle of civilization in Mesopotamia (land  
between the rivers).

All ancient cities destroyed. Bagdad  
is medieval and modern city.

Temples (Ziggurats).

Triple division - Holy of Holies, Priest  
Place, Place of Congregation.

The Tower of Babel was merely a  
temple of Babylon. It consisted of  
seven tiers with a sanctuary on top.  
Each tier was dedicated to a separate  
divinity and had its own color formed  
in glazed brick.



One god was worshiped in each city.  
Monotheism in cities. Polytheism in  
states.

Many tongues in Babylon because of  
slavery.

Arch invented in Chaldea. The oldest known  
one has bas relief of lutanist surrounded  
by animals. Another one has harp,  
double pipe and percussion instruments.

Processions were religious observances.  
Bands of musicians always formed a part  
of these.

## Lecture VII. (I.)

### MESOPOTAMIAN ART.

#### BABYLONIA.

- (K)HAMMURABI (Amraphel—Gen. XIV) 2250 B. C. Vassal of ELAM. Makes Babylon independent—the political and religious centre. First great legislator. Literary renaissance. "BEL-MARDUK," chief divinity. Temple "Esgila."
- BABYLONIAN RELIGION—Zi=spirit (movement) ILU. Naturalistic—Sabeism, Astrology, (3-7-12-30-60), trials. Incantation. Divination. Sacrifice. RITUAL-HYMN. Emenation—Henotheism—Therianthropy. (Parallelism).
- TIAMAT (OMURKA) (dragon of ocean, chaos) & Apsu (fresh water). Rev. XII. Abubu (deluge).
- ANU (Sky, Heaven—Father) & Anatu or Nana (mother Earth)—[ERECH].
- EA or OANNES (Ocean, Divine wisdom, art) & Damkina (Earth)—[ERIDU]. Fish.
- s-BEL or EN-LIL (Earth, Creator. "Lord"). BELTIS or NIN-LIL (Mother. "Lady") morning star. [NIPPUR].
- SIN or URU-KI (Moon-Measurer, 7, fertility) & Nin-gal (great lady) [UR] [HARRAN].
- SHAMASH or UD (Sun—judge and counsellor) & Anunit (moon) [LARSA, ACCAD, and SIPPARA].
- RAMAN or MER (atmosphere, storm, etc.) [JEHOVAH] & Shula, [ASSHUR] bull, lightning fork.
- ISHTAR (Venus—Beauty, love—fertility, Lady of Heaven) & Dazu (Tammuz?) spring sun [ERECH].—[NINEVEH].
- NERGAL (Mars—war, K. of Hades) & Nana [Kutah]—winged lions.
- NINDAR (Saturn—chase) & Gula (vivifies death) Gilgamesh.
- [NINEVEH]. Winged bull and human head.
- MARDUK or BEL-MARODACH (Jupiter, s. of EA, mediator, "Lord") & Zarpanit, [BABYLON].
- s-NEBO (Mercury—prophet, scholar, messenger) & Tashmet, ("hearer" prayer ans.) [BORSIPPA]. BELTIS (+Bel).
- ANUNNAKI=7 spirits of Earth (600). Namta=Pestilence. Gibil=Fire.
- IGIGI=7 spirits of Heaven (300). Idpa=Fever, etc., etc. NUSKU [NEBO]=Messenger, midday sun, winged man, eagle head, pomegranate and basket. No consciousness of human sin. No animal worship, spirits conjured, rather than worshipped. Priests—Patesis—Temples—Ziggurats.
- Tae Gilgamesh (Izubar) Legends—Nimrod Epic (12 songs)—Penitential Hymns, Descent of Ishtar, etc. Creation legend—official documents—Babylonian chronicle. Source of Assyrian, (Chinese?) Hebrew and Greek civilization. Isa. xli. Jer. i. 2 Kings xvii. 30.

#### ASSYRIA.

- Gen. xii.
- Shem's son ASSHUR—Supreme God ASSHUR (dove, winged circle with figure, "eternity, power, wisdom") and SHERUHA (skies).
- Asshur (Kileh-Shergal)—temple of ANU and RAMAN. Patesis of Chaldea (1800 B. C.)
- Calah—Founded by SHALMANESER I (1300 B. C.) who resided at Nineveh.
- TUKULTI-NINDAR (Tiglath Adar—1270 B. C.)—first conquest (?) of Babylon. [Time of Exodus in Egypt].
- OLD EMPIRE.—(1300-745 B. C.)
- I—TIGLATH PILESER I—(1130 B. C.)—defeats the CHATTI (HITTITES) Karkhemish and Damascus. [Phoenicians, Gades—DAVID and SOLOMON, 1050 B. C.] I Kings.
- Art, war and the chase—lions—restores temple at Asshur. TIGLATH-PILESER II (1000 B. C.)
- ASUR-NAZIR-PAL III ("son protector"—884-860 B. C.) renaissance—inscription—his capital Calah [NIMRUD—Layard]—N. W. palace—bas reliefs (in British museum).
- SHALMANESER II (860-824 B. C.)—"annals"—war!—war!—vs. Babylon, Syria, Israel, etc. BEN-HADAD, K. of Damascus; OMRI and AHAB, K. of Israel (Samaria).
- I. Kings xvi-xvii-xx-xvii, etc.—Micah vi. 6. HAZEL, JEHU—(II Kings viii and ix.)
- Black obelisk—gate repousse from Balawat (Rassam)—palace, ziggurat to Nindar.
- SHAMSHI-RAMAN III—Stele. RAMAN-NIRRI III (NINUS ?)—811-783 B. C.)—campaigns—the Madai [MEDES]—his wife (?) SHAMMURAMAT "dove". Called SEMIRAMIS, of Babylon—Palace at Nineveh ("NERBI-YUNUS" mound)—legends—Ishtar—Jonah myths—Ninnu=great city; nunu=fish. Stele of Mesha the Moabite.

## Mesopotamia.

Babylon the most important city finally became independent (Babylonia).

Hammurabi, first great man of history.

Source of much of the Bible found in Hammurabi's library.

(All music and poetry begins with parallelism (repetition)).

Music etc of Chaldaea - Babylonia - Assyria the same, merely an evolution.

Measurement of week artificial (seven days seven divinities).

Day is unit of measurement of music of the spheres.

Melody of America is a garden of Eden tune. Seven tones - seven lines.

Minor scale ancient. Major scale derived from relative minor.

5 Dominant - son of the tonic.

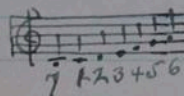
2 Supertonic " " " dominant.

6 Submediant " " " Supertonic.

3 Mediant " " " Submediant

7 Leading tone " " " Mediant

4 Subdominant " " " Leading tone.



Chaldean scale ("American" scale)

Ninevah is hardly a cradle of civilization but a continuation of the cradle.

The mud of Chaldea was a refined mud. It could be used for all purposes and was so used. (Mud in Egypt coarse, not good for extensive use).

Oriental rulers in Babylon.

Palace and temple only high buildings in Babylon.

Necessity invented divinities. God characteristic of country. Fish god along the river, wheat god in the uplands. All peoples also worshiped the sun.

Symbols in existence in Chaldea. Same meanings as those today (associated with divinities). Symbols express desire for something. Beard symbol of wisdom.

Three types of musical instruments all in existence. String type preferred. Musical instruments used for pleasure and religion (Daniel III).

Lyre = harp.

Carpet = Rams horn.

Stone used for building in Ninevah (Assyria). Ninevah unearthed a few years ago. Same kind of temples as Babylon. Solid walls and courts.

Fort, palace and churches combined.

Ninevah doesn't differ materially

architecturally from Babylon.

Exterior and interior walls of palaces decorated. Slabs of alabaster cover the interiors. Decorations give conception of life of people, occupations, pleasure warfare divinities. Information of musical instruments in Nineveh and Babylon from interior walls. Also passage of Scripture.

Slavery cause of destruction of nations. Caused Babylonian and Assyria's downfalls. Slavery is the worst of crimes.

# Lecture VIII.

## THE ART OF ANCIENT EGYPT.

*The Nile*—Source—Cataracts—Delta.

KEM. MIZRAIM (Heb.) NUBIA. PUNT.

The Desert. The Fayum. Inundation. Irrigation. [Pottery].

The Libyan Hills. Mokattam. Sinai. Limestone, Sandstone, Granite. Alabaster. Clay

The Palm. Papyrus. Lotos. Lily.

The Hawk, Ibis, Vulture; Scarabaeus, Uraeus, crocodile; Jackal, Lion, Ram; cow, bull, cat.

The Hieroglyphics [Rosetti Stone, 1799—CHAMPOLLION.] Hieratic—Demotic.

Literature [Papyri, etc.] Scientific, Religious, Belletristic. Lyric. Epic. "Nanies."

Parallelism.

The Book of the Dead.—Decoration of Tomb and Temple.

Hymns. The Lute [Nefer=beautiful, goodness.] 3 strings—THOTH. The Sistrum:

PREHISTORIC EGYPT.—The finest stone age—Copper (Cyprus).

N—Buto—4241 B. C. S. Nekheb (El Kab). Thinis Abydos [Dr. Petrie].

THE EMPIRES=OLD—MIDDLE—NEW—THE DYNASTIES [31—Manetho, 305 B. C.]

THE NOMES=LOWER—MIDDLE—UPPER.

THE HOMES=MEMPHIS. Beni-Hassan. THEBES=capital of Egypt

THE STONES=Pyramids. Rock-cut Tombs. Temples. Obelisks. Statues.

Masbatas. RELIEFS.

THE TONES=Lute. Lyre. Harp: Flutes, cymbals, Sistrum. Orchestra, chorus.

Scale, 7. Diatonic, chromatic, Enharmonic. Harmony (?) [Tempera]

Colors—White, Red, Brown, Yellow, Blue, Green, Black, no gradation.

SYMBOLISM. IMMORTALITY. IMMOBILITY. DURABILITY. CONSERVATISM.

THE DYNASTIES AND PHARAONS [Pe-to=great house].

I. Thinis. MENES. Tomb at Negadeh. founds Memphis.

[18=3400—2980, B. C.] ZER. T. at Abydos [OSIRIS]—Jewelry of Queen.

II. MERNETIT —DEN— KHAHEHEMNI. Earliest stone tomb.

THE OLD EMPIRE. MEMPHIS [Men + Nofer +].

III. ZOSER—step pyramid at Sakkarah. Imhotep the architect—saint.

(2980—2900). SNEFRU—step pyramid at Mejdun. Pyramids at Dahshur.

Ra-hotep + Nefere mastaba at Sak', reliefs, statues.

IV. 1. KHUFU Great Pyramid at Gizeh (9).

[8—2900—2750] 3. KHAFFRE. Second Pyramid at Gizeh. Temple (7 statues)

4. MENKURE, Third Pyramid at Gizeh. Sphinx [ZOSER].

V. 3. NEFERIRKERE. Statue of priest Ra-Nofer. Mastaba of THY, royal

(9—2750—2625) architect, at Sak'=mural reliefs; flute players and harpers, music at meals;

dancing—animals. Art zenith.

6. NUSERRE. Temple and Colonnade. Ptah-hotep, judge, moral precepts.

9. UNIS. Pyr at Sak'—1st religious lit. Pyr. texts

VI. Nomes. Princes. TETI II. Tomb of Meren-Ka (Meri) 31 rooms, harps, dancing.

(2625—2475) PEPI I. Pyr. at Sak', names "white wall," men-nofer=MEMPHIS.

PEPI II. Pyr. at Sak'.

VII.—X.—Memphis and Heracleopolis. (2475—2160) ABRAHAM from UR.

XI. Thebes. The INTEFS and MENTUHOTEP (II—oldest shrine at Th.)

(2160—2000).

RELIGION.—

Prehistoric=fetish—Trees, animals. Town gods=Environment + heavenly bodies—

daemons, propitiation, magic, formulae, incantations.

Ba=soul=bird + human head. Ka=double-guardian spirit. SOKARIS=dead.

RE=SUN=boat, hawk, beetle. ANUBIS=dead (Jackal).

NUT (sky goddess) + KEB (Earth) and SHU (atmosphere).

ABYDOS=ISIS (cow=Delta) + OSIRIS [wen-nofer=Nile] and HORUS (son=Egypt

sparrow hawk) vs. SET (evil=ass).

MEMPHIS=PTAH (artists—Apis Bull) + Sekhmet (Lioness-war)=Nefertem.

HELIOPOLIS [ON]=ATUM (Lion-Bull) + Sefkhet-(writing) + RE-HARMAKHIS (Horus

at dawn—Sphinx)

THEBES=AMON-RE (ram) + MUT (vulture)=KHONS (moon+hawk).

Edfu=HORUS Phylae=ISIS Hermopolis=THOTH (moon-Ibis-Science, Letters).

Bubastis=BAST (cat+joy). Denderah HATHOR (Joy-sky+cow) Sais=Neith

Elephantine=KHNUM, (ram). Fayum. Sobk (crocodile.)

MA'AT (Truth, feather-sistrum)

42 Judges. Book of Dead=guide for Amenti.

## Egypt.

Earliest civilization found in the Upper Nile. (Cairo - medieval and modern city). (Alexandria also comparatively modern).

Country flat. Cairo - a Mohammedan city - nothing ancient. Hotels of Cairo very fine - ornamented in Egyptian style.

Limestone hills. Quarries.

Low hills separating Nile from the Desert.

Pyramids at Gizeh.



Cheops



Chephren

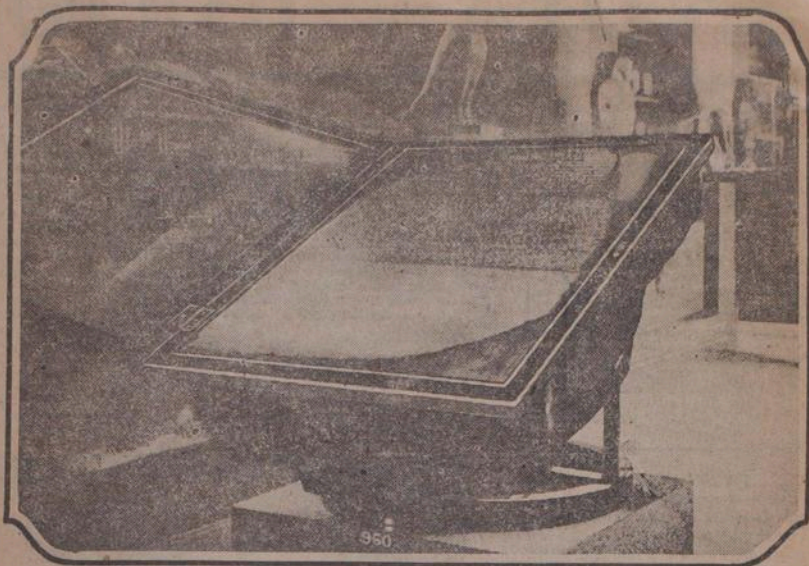


Menkure

Pyramids - cemetery of the city of Memphis.  
6 pyramids. in all.

Memphis had pyramids to the North and South, Death to the West and Life to the East.

## Here Is Key to Secret of Pharaoh's Tomb



Treasures of gold, silver, and gems were revealed when Lord Carnarvon and Howard Carter discovered the tomb of Tut-Ankh-Amen, the inner chamber of which had only just been opened; but a treasure of far greater worth than these was also found, the treasure of historical records, carved in hieroglyph on the stones within . . . a treasure that virtually completes the history of ancient Egypt as a complete chronological record.

But these hieroglyphs would be but useless hen tracks were it not for a really greater discovery, more than a century ago, and for the patient, intelligent effort of Jean Francois Champollion.

The Rosetta Stone, shown here, in its case in the British museum, in England, is the key to the history of Egypt. It bears a decree, written in hieroglyphic, Egyptian demotic, and Greek, issued by the priests of Memphis in honor of the coronation of the Fifth Ptolemy, 195 B. C., and was found near the Rosetta

mouth of the Nile in 1799 by Andre Bousard, one of Napoleon's engineers. It was ceded to the British in 1801 and since then has been in the Museum in London. And nearly a quarter of a century later a youthful Frenchman, Jean Francois Champollion, used this stone to learn and give to the world the secret of hieroglyphic writing. Since that time Egyptologists, using that secret, have been able to read the history of ancient Egypt as written on the stones found in tombs and other excavations.

Nile. Source - Abyssinian Mountains (Blue Nile).  
Lake Victoria-Nianga (White Nile).

Egypt. Sem-Black Land.

Mizraim (Upper and Lower Egypt.).  
Surrounded by deserts. Always emphasis  
upon life and death.

Fayum (Garden of the Desert).

Hills near Selt - Libyan Hills.  
Mokattam Hills - Limestone

Sinai Peninsula - Hard stone  
quarries - granite. Also sandstone  
and alabaster.

Clay used only for pottery and that  
was of a coarse type.

Papyrus - tough when crushed. Used for  
paper. Records on Papyrus. Motives -  
Lotus and Lily flowers.

Animals. Many identified with  
religion.

Scarabaeus (beetle) very sacred symbol  
of immortality. Beetle came first  
from mud after inundation.

Uraeus - snake associated with  
wisdom.

Hieroglyphic - picture writing -  
descended to hieratic and then to  
demotic.

Their most important Book was the  
Book of the Dead. - buried with all mummies.

## Musical Instruments

Lute 3 strings (Became hieroglyphic  
(nefer meaning good beauty became tone of  
lute was beautiful.  $\ddagger$ ).

Sistrum - rattle - metal bells - percussion.  
Played only by women. Used in religious  
ceremonies.

## Prehistoric Egypt.

Egypt had the first Stone age. Followed  
by a copper age. Three old towns - Buto,  
Nekheb, Thinis.

Memphes - smaller places of entombment  
many reliefs - source of musical infor-  
mation.

Egyptians believed in immortality on  
this earth.

Pyramid of Zoser - step pyramid  
(some relation to Chaldean towers).

Cartouches - Royal names.

 Sun Ra  
nefer nefer  
hands ka

Neferka - Ra. Beautiful or perfect image of  
the Sun.



Neferkasokar.



Immortality.



Old Empire Memphis. 4000 B.C.

The Pyramids had temples in front of them in which many burial ceremonies took place before the mummy was left in place.

At first the temples were formed of square columns with no decorations.

Bedroshan to Memphis - barren of interest. Small pyramids seem to be series of steps - seem to indicate connection with Chaldea. Step Pyramid of Zoser.

Inscriptions in Mastabas. Tutankhamun.  
Mummies of animals in large tombs.  
Mummies and sarcophagi. Statues of Mummies in tombs.

No palaces remain but it is established that they were decorated similar to Chaldean palaces.

Illustrations sometimes found on mummies' clothes and on papyrus. Many stone and wood statues of divinities and others found in tombs.

#### **Egyptian Idea of Beauty.**

The Egyptians made the most exhaustive researches into the care and preservation of the skin. Their success in arresting the decomposition of its tissues as evinced by the mummies of their pre-Christian era kings defies modern science. Just as the secret of mixing paints of the old Italian painters has never been duplicated by present-day artists and their mastery of color remains supreme, so the embalming processes of the old Egyptians died with them.

The ancient Egyptians painted their eyes with a long green line and believed very strongly in applying to the eyes mesd'empt, which was considered to have the soothing and healing properties of kohl, which is still used by eastern peoples—where, incidentally, ophthalmia is very prevalent.

## Middle Empire - Benihasen

Go to the <sup>in the hills</sup> tombs about Benihasen. These tombs are cut from solid rock. Here we find the proto-doric columns. The four sides have become eight and the eight sixteen.



4 measure eight measure sixteen measure  
phrase sentence tune.

Wooden columns first consisted of many reeds banded tightly together. Therefore first stone columns were carved to imitate the wooden ones. The capitals were lotus heads and flowers.

These tombs are also decorated

Israelites came to Egypt in the Middle Empire. Settled in Goshen. They were kept in subjection and required to make brick.

We find many obelisks in Egypt. They are hymns to the sun gods.

Double flutes and harps were popular in the Middle Empire. Their small harps corresponded to our violins and violas and their large ones to our cellos and double basses.



*Figure of a slave  
girl, standing, found  
in a tomb near  
Thebes.*

New Empire Thebes 1500 B.C.

18<sup>th</sup> and 19<sup>th</sup> Dynasties greatest period of Egyptian History. (City of Thebes).

True Egypt should be identified with Thebes and temples (not with pyramids).

Ramesses II (19<sup>th</sup> Dynasty) Time of Moses.

Thebes. East Bank (Temples) (Life part).

" West Bank (Tombs) (Death part).

Luxor and Karnak are great winter resorts because of ruins and climate.

Near Thebes are two great colossal - Memnonas. One is called the Vocal Memnon because every morning a sound is heard to come from it.

The Kings tombs are ~~cut~~ cut into the mountain while the lesser tombs are cut down into the mountains. Tomb of Queen Hatshepsut very famous for paintings. Queen Hatshepsut very important. She conducted an expedition into the South. (Land of Shiba.).

Passageways into tombs very large. Picture of first musical instrument (harp) of Egypt found in tomb of Ramesses III.

At Luxor is found the ruins of a large temple. Between Luxor and Karnak extends a roadway lined with ruins of

## RUINS OF PHARAOH'S TOMB



—SCOTT & BOWEN—

Luxor, Egypt, Jan. 26.—(By the Associated Press).—Pharaoh Tutankhamun, the mightiest king in the world three thousand years ago, whose tomb was recently discovered in Egypt, is to be x-rayed if his mummy still lies in the tomb.

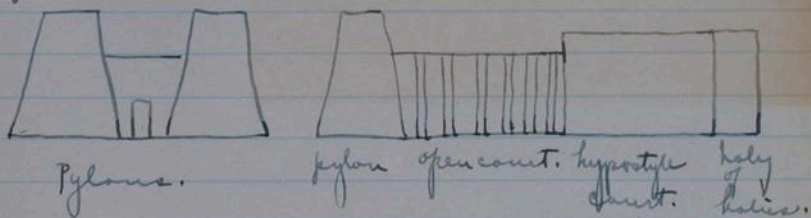
When the archaeologists now at work on the tomb open the alabaster coffin, take off the thin cover of gold and carry the shrouded form into the sunlight, it will be photographed from every angle. The hundreds of yards of bandage will be unwound and for the first time in history a film of the weird sight will be made.

It has been decided that the mummy is to be x-rayed before the bandages are removed as it is expected that this will throw an important light upon the ritual of embalming as practiced by the ancients.

Photograph shows the ruins of Luxor.

Sphinxes. At Karnak there is a great temple complex. Each pharaoh here built a temple which he added to the ones built before. These temples are very massive.

The Egyptian temples consisted of two massive pylons behind which was an open court with a colonnade on each side. Behind this was the hypostyle court which consisted of a mass of pillars supporting a roof. The center <sup>and higher</sup> circle of pillars was more massive than the rest so that light was let in from above. Behind the hypostyle court was the holy of holies which consisted of three chambers one for each of the divinities.



The lotus bud and flower formed the shape of the capitot. The sculpture on these pylons was in bas-relief. There was a statue in each of the holy of holies. In front of every temple was a great colonnade of the Pharaoh who built the

temple.

However musical instruments and their representation are found in the tombs. Going farther up the river we find the Isle of Phylae which is the most holy ground of Egypt. Here all the mummies rested for a while before being embalmed. Temple of Isis is on this Island. Near head <sup>one of</sup> the cataracts. No channel because of great lava deposits of granite. Granite meant to the Egyptians, quarries carving obelisks.

Also near here are four great statues of Ramses II cut out of solid rock. Back of these is a rock temple (full size) cut out of solid rock. All the Egyptian temples were built so that when the sun rose it shone thru the gate in the pylons straight thru to the holy of holies.

The chief musical instruments of Egypt were harp (the greatest) of three sizes 1, hand harp (lyre), 2 kneeling harp and 3 standing harp - the sistrum (woman's instrument) instrument of mourning, nefer, tamboura and double flute.

All left of temple of Os in Juba is the obelisk which was in front of the temple.

## THE STUPENDOUS FIND IN EGYPT

THE DESERT GUARDS ITS DEAD almost as inexorably as the sea, but man has often overcome both guardians. What is thought may prove the greatest archeological discovery of all time has recently been made in Egypt, in the Valley of the Kings, near Luxor. Two chambers of a tomb have been found filled with the funeral paraphernalia of the Egyptian King Tutankhamen, and hopes are entertained that the third chamber, yet unopened, may contain the royal mummy itself. So far reports give only a generalized statement

"First they saw three magnificent state couches, all gilt, with exquisite carving and animal heads of typhon, Hathor, and lion. On these rested beds, beautifully carved, gilt, inlaid with ivory and semi-precious stones, and also innumerable boxes of exquisite workmanship. One of these boxes was inlaid with ebony and ivory, with gilt inscriptions; another contained emblems of the underworld; on a third, which contained royal robes, handsomely embroidered, precious stones, and golden sandals, were beautifully painted hunting scenes.

"There was a stool of ebony inlaid with ivory, with the most delicately carved duck's feet; also a child's stool of fine workmanship. Beneath one of the couches was the State Throne of King Tutankhamen, probably one of the most beautiful objects of art ever discovered. There was also a heavily gilt chair, with portraits of the King and Queen, the whole encrusted with turquoise, cornelian, lapis, and other semi-precious stones.

"Two life-sized bitumenized statues of the King, with gold work, holding a golden stick and mace, faced each other, the handsome features, the feet, and the hands delicately carved, with eyes of glass and head-dress richly studded with gems.

"There were also four chariots, the sides of which were encrusted with semi-precious stones and rich gold decoration. These were dismantled, with a charioteer's apron of leopard's skin hanging over the seat.

"Other noteworthy objects were royal sticks, one of ebony with the head of an Asiatic as a handle in gold, another of the handsomest filigree work; also a stool for a throne with Asiatics carved on it, denoting that the King were royal sticks, one of ebony with the head of an Asiatic as a handle in gold, another of the handsomest filigree work; also a stool for a throne with Asiatics carved on it, denoting that the King

had placed his foot on the neck of the Asiatic prisoners taken in war. There were some quaint bronze-gilt musical instruments and a robing dummy for royal wigs and robes.

"There were also some exquisite alabaster vases with very intricate and unknown design, all of one piece, and some handsome blue Egyptian faience, and enormous quantities of provisions for the dead, comprising trussed duck, haunches of venison, etc., all packed in boxes, according to the custom of the time. There were some remarkable wreaths, still looking evergreen, and one of the boxes contained rolls of papyrus, which are expected to render a mass of information.

"A further chamber revealed an indescribable state of confusion. Here furniture, gold beds, exquisite boxes, and alabaster vases similar to those found in the first chamber were piled high one on top of the other, so closely packed that it has been impossible to get inside yet.

"Numbers of these treasures are in a fairly good state of preservation, but others are in a somewhat precarious condition. The greatest care is being taken in handling them, however, and there is every hope that under Mr. Carter's capable direction most of them will be preserved."

A little later *The Times* publishes Lord Carnarvon's own



of the richness of the find, and no photographs of the objects have been received. Pictures published in various papers have been reproductions of earlier finds, representing, however, objects probably contemporary with those newly come to light. The discoveries were made by the excavators working under the concession made to Lord Carnarvon, and American interests as well as English are involved in the results. So rich and valuable are the things brought to light after an almost fruitless search of sixteen years that the Egyptian Government has drafted a bill which provides that Egypt herself shall have the first option on any archeological find of this and future diggings. It is protested, however, that such a law would put an end to research, as those who provide the money do so in the expectation of sharing in the rewards. Credit is given to Mr. Howard Carter, an American who has worked under Lord Carnarvon, for his "dogged perseverance, his thoroughness and, above all, his flair." The first report published in the *London Times* enumerates some things which met the eyes of the diggers after effecting a difficult entrance:

account, giving some hint of the emotions accompanying the discovery of objects sealed from sight for 3,000 years.

"On the next day we began clearing the passage, which proved to be about eight meters in length. Objects, mostly broken, kept turning up, among others, was a broken box with various carouches upon the top rib, which may help us, later on, to reconsider the duration of the two anterior reigns.

"At last this passage was cleared. We again reached a sealed door or wall bearing the same seals as in the case of the former one. We wondered if we should find another staircase, probably blocked behind this wall, or whether we should get into a chamber. I asked Mr. Carter to take out a few stones and have a look in. After a few minutes this was done. He pushed his head partly into the aperture. With the help of a candle, he could dimly discern what was inside. A long silence followed, until I said, I fear in somewhat trembling tones, 'Well, what is it?' 'There are some marvelous objects here,' was the welcome reply.

"Having given up my place to my daughter, I myself went to the hole, and I could with difficulty restrain my excitement. At the first sight, with the inadequate light, all that one could see was what appeared to be gold bars. On getting a little more accustomed to the light, it became apparent that there were colossal gilt couches with extraordinary heads, boxes here and boxes there. We enlarged the hole and Mr. Carter managed to scramble in—the chamber is sunk two feet below the bottom passage—and then, as he moved around with a candle, we knew we had found something absolutely unique and unprecedented.

"Even with the poor light of the candle one could see a marvelous collection of furniture and other objects in the chamber. There were two life-sized statues of the king, beds, chariots, boxes of all sizes and shapes—some with every sort of inlay while others were painted—walking-sticks, marvelous alabaster vases, and so on. After slightly enlarging the hole we went in, and this time we realized in a fuller degree the extent of the discovery, for we had managed to tap the electric light from the tomb above, which gave us far better illumination for our examination.

"One of the finest objects is the chair or throne of the King. It is in wood. The back panel is of surpassing beauty, and portrays the King and his Queen protected by Aton rays. All the figures, etc., in this scene are built up by means of semi-precious carved stones, inlaid into wood. The delicacy and grace of this work of art are indescribable, and it is, indeed, fortunate that we have struck a period when Egyptian art reached one of its culminating points. I kept on wondering why we had found no coffins; nothing of the shape of one was visible. A few minutes later, beneath one of the beds of state, we came on a small opening, giving into another chamber. There the confusion was beyond conception. It was utterly impossible to enter, as the room was packed with chairs, beds, boxes, statuettes, alabasters, and every other conceivable object, to the height of five feet. As far as could be seen, however, no coffin had been placed there.

"But on examining the first chamber again we discovered, between two life-sized statues of the King, a walled-up portion of the northern end of the first chamber. This was also covered with seals, but on the level of the floor, in the center of this wall, there were traces of a very small break having been made, large enough to admit a small man. This had been subsequently resealed, probably by Rameside inspectors.

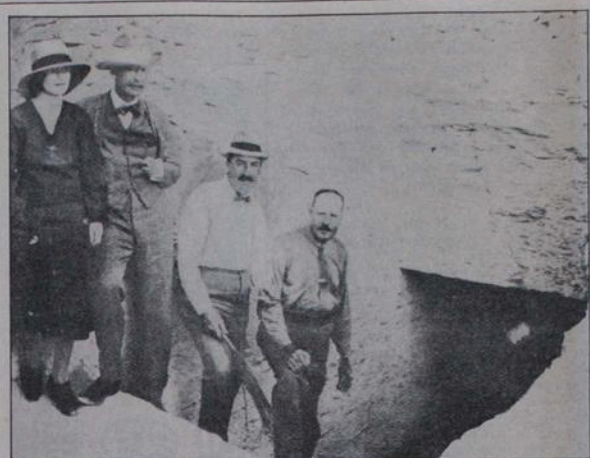
"Lastly, the absence of mummies was explained. There is little doubt that behind this wall there exists a chamber or chambers, and in one of these probably reposes, in his coffin and sarcophagus, the body of King Tutankhamen.

"Should this royal burial-place prove to be untouched, then the sight to be revealed will prove to be absolutely unique in the experience of any living archeologist, and, as far as I know, in the history of archeology.

"It is impossible to foresee what may be behind that wall, and it has been a severe tax on one's curiosity not to demolish part

of it and obtain some idea of the possible marvels, or disappointments, which await one there. Owing to the congestion of the objects in the first chamber, it would, however, have been harmful, and almost impossible, to do anything before clearing the first room of its contents, and we must possess our souls in patience until this is done. However, by beginning in February, I hope that the work will be sufficiently advanced to enable us to discover what may be behind that tantalizing wall."

A dispatch from Luxor to the New York Times postdating the



THOSE WHO HAD THE FIRST INSIDE LOOK

In their order from the reader's left are Lady Evelyn Herbert, daughter of Lord Carnarvon, who is second, then Mr. Howard Carter, and Mr. B. Callender, principal Assistant.

publications above states that the new information being gained "seems to confound many former beliefs, but does not go far enough to enable the construction of other theories in place of those demolished." The dispatch proceeds:

"What makes the discovery most important is that the Egyptian period of the fourteenth century before Christ had hitherto been lost in antiquity, and yet it seems that the period was the greatest in ancient Egypt's history. Amenhotep III, who was the father of Khunaten, brought ancient Egypt to the zenith of its political power, and as it has been apparent from other periods that the decline of Egyptian political power was always accompanied by a decline in refinement and the arts, it is assumed that the culmination of ancient Egypt's national glory had its counterpart in the highest development of civilization reached during the Egyptian Imperial age.

"Unfortunately the world previously had no definite evidence of the state of development reached, but from the discoveries in Tutankhamen's tomb it is thought he reigned at a period when Pharaonic political power and the ancient Egyptian estheticism of magnificence and splendor glowed at its brightest.

"It is known that the decline set in almost immediately after the death of Tutankhamen.

"N. Deggaves, attached to the New York Metropolitan Museum's staff at Thebes, discussing the artistic aspect of these discoveries, frankly admitted to me that the decorations on some objects in this tomb are unprecedentedly beautiful, tho he explained that softness and grace had been secured at the expense of the simplicity and dignity of the earlier Egyptian art. His most important statement, however, was that most of the objects in this tomb probably did not represent eighteenth dynasty art at its highest, because they were made for funeral equipment, and, therefore, presumably were not as carefully done as objects for domestic or official use in the palace or the mansions of nobles. It again indicates how great must have been the esthetic splendor of that period."

# World Soon To Have Revealed A Great Mystery; Tomb Of Egyptian King 3,000 B. C. To Be Opened

Carter, American Egyptologist,  
Penetrates To The Sealed Inner  
Chamber Of Great Pharaoh's Tomb

Dispatches of Arthur E. P. Brome Weigall, Former Inspector-General of Antiquities for Egyptian Government, Now at King Tutankhamen's Burial Place, Will Be Published Exclusively in Rochester in The Times-Union.

That the art and culture of ancient Egypt surpassed that of Greece and Rome in their greatest days is attested by the discoveries recently made by Howard Carter, the American Egyptologist, working under the auspices of Lord Carnarvon to unearth the tomb of King Tutankhamen, a ruler in the 18th dynasty of the ancient Theban Kings at Luxor, Egypt.

Anticipating the most important revelation of treasures yet brought to light when the sealed chamber of the tomb is opened soon, the North American Newspaper Alliance and the London Daily Mail have assigned Arthur E. P. Brome Weigall, former Inspector-General of Antiquities for the Egyptian government, to go direct to the scene of operations to report the progress of the excavations.

In his dispatches the first of which is published today in The Times-Union, where they will have exclusive publication for Rochester, the public will be given the opportunity to read an absolutely new chapter of the most fascinating historical revelations of all time.

By Arthur Weigall.

(Copyright 1923 by North American Newspaper Alliance.)

Luxor, Egypt, Jan. 18.—As the time draws near when it will be possible to open the sealed inner chamber of the tomb of the ancient Egyptian King Tut-ankh-amen, recently discovered by Lord Carnarvon and Howard Carter, the American Egyptologist, there is much speculation as to what will be found in it. Presumably, the mysterious inner chamber is the burial chamber in which the great Pharaoh lies, but of this we cannot be absolutely certain.

The now famous tomb, it must be understood, is not intact. It shows evident signs of having been entered by thieves and then sealed up again by officials of the Necropolis at a later date.

The robbery must have taken place very soon after the funeral—B. C. 1350. For a generation or two later the tomb seems to have been lost to sight and recollection beneath many tons of stone gravel and when the large tomb of Ramesses the Sixth was prepared about B. C. 1150, the existence of Tut-ankh-amen's sepulchre, a few feet below the site chosen, apparently was unsuspected.

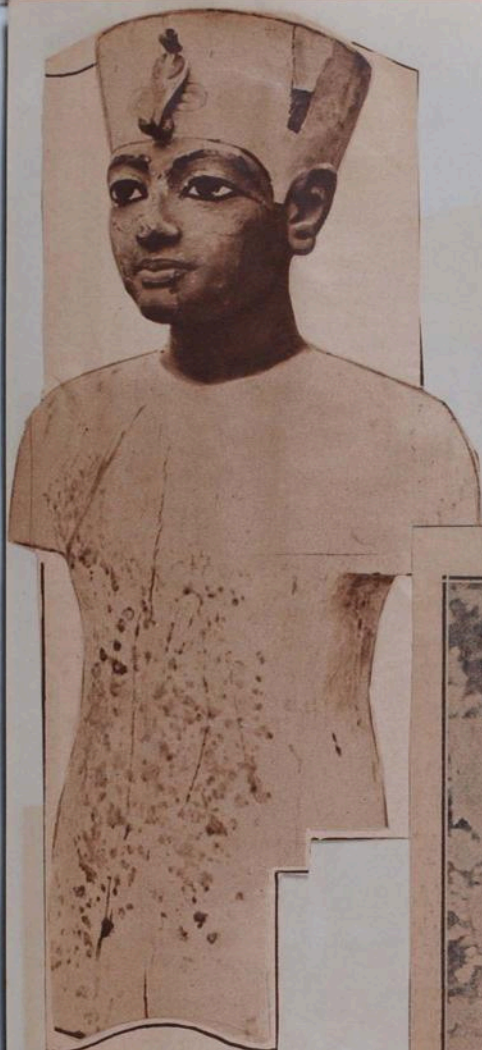
I think in the present case Lord Carnarvon may expect to find a wooden coffin covered with gold leaf and having the name of the king and his titles inlaid in hieroglyphs made of semi-precious stones. There may be two coffins, one inside the other, and the mummy probably will be wrapped in sheets of gold—unless these have been taken. Then there will probably be four canopic vases with lids in the form of portrait heads of the king, some symbolic animals in wood, and other religious objects.



ARTHUR E. P. BROME WEIGALL.

a wooden canopy or within a stone sarcophagus. Sarcophagi in the tombs of his predecessors have generally been made of quartzite sandstone, but that which we found in the tomb of Horemheb Pharaoh, who died a few years later, is of pink granite, also is that of Ay, Tut-ankh-amen's immediate successor. On the other hand he found, the body of Akhnaton, Tut-ankh-amen's father-in-law, resting in its coffin on the remains of a wooden bier and not in a sarcophagus and this may be the case in the new discovery.

It is very unlikely that the mummy of the Queen will be found beside that of the king for she is known to have arranged another



Above — A life-size wooden mummy of Tut-ankh-Amen, used for robing purposes, found in Luxor tomb.



LORD CARNARVON.

The English millionaire archeologist whose financial backing made possible the success of the Luxor excavations.

### At The Entrance Of Ancient Tomb

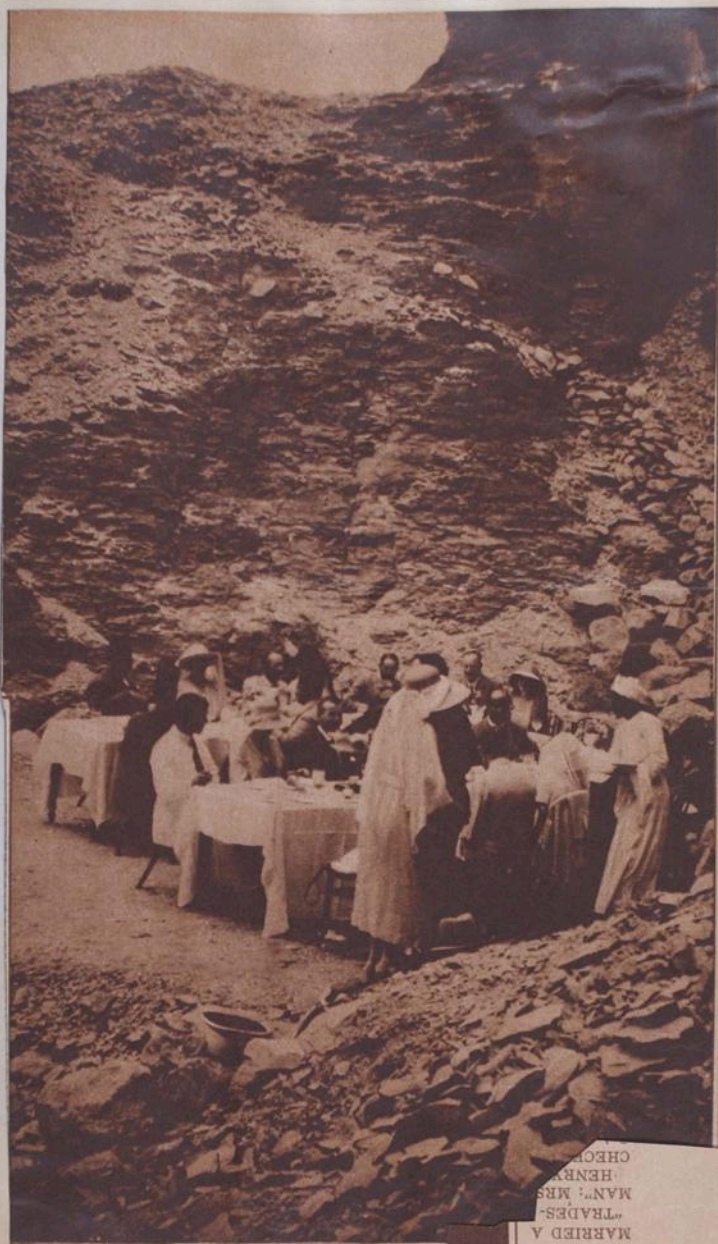


1. Howard Carter at the entrance to the tomb of King Tut-Ankh-Amen, holding a piece of the plaster removed to obtain entrance. The plaster bore the imprint of the Seal of the King. Howard Carter is the American who backed by Lord Carnarvon made this greatest archaeological discovery in history.



SCENE  
OF THE  
GREATEST  
"FIND" IN  
EGYPT IN  
THIS GENERA-  
TION: SOLDIERS  
ON GUARD

Over the Gateway to  
the Tomb of Ramses IX.,  
Just Below Which Is the  
Entrance to the Tomb of  
Tutenkhamen, in the Foremost  
Chambers of Which Lord Carnarvon  
and Howard Carter Discovered a Treas-  
ure Worth £3,000,000.  
(Times Wide World Photos.)



LUNCH ABOVE THE TOMB OF TUTENKHAM  
and His Party of Archaeologists Give an Al

CHERO  
HENRY  
MANN, MRS.  
TRADES-  
MARRIED A  
WHO  
DAUGHTER  
VISCOUNT'S

# Tomb Of Constituent Of Tut-Ankh-Amen Found

Wall Paintings Tell of Incidents Pointing to Thirteen Hundred Years B. C.  
—More Experts Arrive at Luxor.

(By Arthur Weigald, copyright, 1923, by North American Newspaper Alliance and London Daily Mail.)

Luxor, Egypt, Jan. 31.—Yesterday being market day no work was done at the tomb of Tut-Ankh-Amen. The sudden bracing weather has sent tourists off in all directions on excursions to temples and tombs and I myself was out on an early visit to excavations being conducted by archaeologists of the Institut Français in the valley of Deir El Medine. Here I was shown the mortuary chapel just discovered. It is built of bricks in the form of a pyramid, having inside a small chamber with wall paintings which by the style of art I can date unquestionably as belonging to the reign of Tut-Ankh-Amen. It is a strange coincidence that while the tomb of Tut-Ankh-Amen is being cleared of its contents in the valley of the Kings, this shrine of one of his wealthy subjects should also be found.

Dr. Derry, the anatomist and great authority on mummies, arrived Monday night to look at the mummies of princes found by American excavators in another part of the Theban Necropolis, but he does not know yet whether he or the equally celebrated Professor Elliott Smith will superintend the examination of the body of Tut-Ankh-Amen if and when it is found.

The last of the treasures of Pharaoh Tut-Ank-Amen were being removed today from the outer chamber of his tomb, preparatory to opening of the sealed inner room where the monarch of more than 3,000 years

ago is believed to lie.

It is likely that several days will elapse before the excavators break through the walled-up doorway leading to the inner tomb, as all the contents of the outer chamber must first be removed. They are very fragile and can be handled only by experts. Therefore, the work of removal is proceeding slowly.

There are about a dozen objects left to be taken out, including chariots and two couches of state. They have been left to the last because of the extreme difficulty of carrying them to the light of day, through the narrow underground passage, without damage.

Hundreds of tourists are flocking to the vicinity of the Valley of the Kings in anticipation of the opening of the inner tomb. They approach as near as possible to the great Necropolis of the rulers of ancient Egypt and gaze in awe at the dark doorway leading to the subterranean chamber where the war chariots, regal couches, official wands, and garments are being uncovered.

## AMERICANS IN EGYPT DISCOVER BODY OF PRINCESS WHO RULED 2,000 YEARS BEFORE CHRIST

Luxor, Egypt, Jan. 20.—(By the Associated Press.)—Interest in the tomb of former King Tutankhamun was temporarily diverted to-day through the discovery by the American archaeologists of the body of an Egyptian princess 4,500 years old and apparently one of the beauties of the first Theban dynasty which flourished 2,150 years before Christ.

The bosom and neck of the princess are delicately tattooed with small bluish symbols and traceries emblematic of her caste. The body is marvelously preserved. The hair and teeth are intact. Slight indentations on the neck, wrists, fingers and ankles indicate that the princess wore necklaces, bracelets and rings in her death sleep, which were stolen when vandals desecrated her tomb.

The body appears to have been that of a slender and statuesque but immature girl. It is believed she died at an early age. There is a long mark across the stomach, evidently inflicted with a hot iron. This has inclined the medical experts to believe the princess succumbed to an organic disease, which in ancient times was treated by violent counter-irritants. The body will be sent to the Cairo Medical Laboratory for a pathological examination.

## BOX FROM PHARAOH'S TOMB



Wide World Photos.

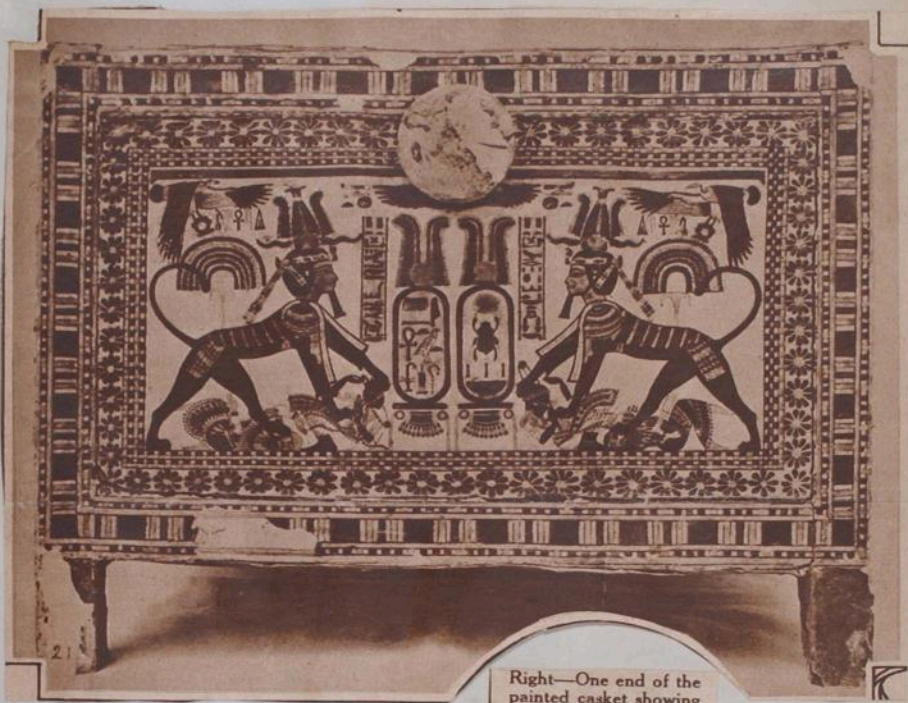
An exclusive photograph of the ebony box, covered with gesso gilt, and inlaid with ivory and bronze, being removed from Tutankhamen's Tomb, Thebes, by native bearers under the direction of Howard Carter. When opened, the box was found to contain a top layer of folded linen, under which there seemed to be wooden articles, either the dead Pharaoh's walking-sticks, staffs of office or his bows and arrows.



From the London "Globe."

### A RIVAL OF THE MODERNISTS.

A bit of Egyptian sculpture, portrait bust of Queen Nefertiti, brought to Berlin in 1912 from Tel-el-Amarna. Tutankh-Amen's mother-in-law.



Right—One end of the painted casket showing King Tut in the form of Andro-Sphinx trampling upon his African enemies. In center are two cartouches surmounted by winged solar disk.

Times Official Photos.

# Elaborate Royal Couch Taken From Ancient Tomb

Piece of Furniture Covered  
With Gold Leaf Sees  
Light of Day for First  
Time in Over 3,000 Years  
—Modern Ideas Seen.

By Arthur Weigall

(Copyright 1923 by North American  
Newspaper Alliance and London  
Daily Mail.)

Luxor, Egypt, Jan. 25.—This morning's great event at the tomb of Tut-Ankh-amun was the bringing out of one of the three great ceremonial couches and conveying it, under heavy armed guards of soldiers, to the workshop nearby. These couches are each made in three pieces, a body and two sides, joined by surprisingly modern looking hooks and staples. The ingenuity of their construction would delight the modern carpenter or joiner. Evidently they were taken into the tomb in pieces and put together inside as they were found.

Mr. Lucas tells me that uncoupling them was a very simple matter. The two sides of this particular couch are each fashioned in the form of a thin elongated cow of the goddess Hathor, so that the bed, as it were, slung between two cows. The whole thing is of wood covered with gold leaf, with spots on the side painted black. At one end is the cow's head and tall horns with a sundisk between them and the two forelegs close together. At the other end are the hind quarters and tail curling over. As Mr. Carter, Mr. Lucas and Mr. Maco appeared from the dark entrance passage carrying one of the bizarre and rather grotesque faces of the creatures that forms the heads



Arthur E. P. B. Weigall, noted Egyptologist and novelist who has been sent to Luxor, Egypt, by the North American Newspaper Alliance and the London Daily Mail to write series of articles upon the important discoveries now being made there.

of the royal couch considerable excitement among the tourist spectators. The creature's face had an assuredly startled expression as it emerged into the blazing sunshine after more than 3,000 years in darkness. These couches seem too short and too elaborate to be sleeping beds and it is more likely that they were some kind of thrones on which royalty reclined. But I admit that the representation of a Pharaoh reclining thus is unknown. They are always seated upright, but it may have been a custom introduced from more luxurious Asiatic courts during Akhnaton's reign.



London "Times" New York "Times" copyright by arrangement with the Earl of Carnarvon.

## A TOMB TURNED LABORATORY.

Chamber in the tomb of Seti II at Luxor, used to house and apply preservative processes to the treasures from the tomb of Tut-Ankh-Amen.

# First Sketches Brought To America Of Recently Discovered Art Treasures Found In Tomb Of King Tut-Ankh-Amen In The Valley Of The Kings, Luxor, Egypt-Sketched At Luxor, Dec. 22



(Copyright, 1923, by North American Newspaper Alliance.)

Buried from the world for over 3,000 years they throw many new sidelights upon the customs and splendors of that ancient era. The excavation of this tomb was effected by the British Egyptologist, Lord Carnarvon, and his assistant, the American archeologist, Howard Carter. Its marvelous contents have astounded the world. The complete examination of its relics—now under way—will add materially to our fund of knowledge concerning the wealth and glory of the 18th dynasty.

All the relics so far unearthed in the Tut-Ankh-Amen tomb have proved of great historical and artistic interest. Indications point to the fact that these great kings of the 18th dynasty, who reigned and died nearly 14 centuries before the coming of Christ, may have been known to Moses, and that possibly the great Tut-Ankh-Amen himself was the exalted ruler who uprooted the former prophet's teachings and restored Egypt to Polytheism. The monetary value of the relics exceeds anything yet found, and the few already brought to light are worth in the neighborhood of \$40,000,000.

Object 1.—(Reclining from left to right) "The king's imperial chariot." This chariot made entirely of wood, including wheels and axle—the body covered with leather, studded with precious jewels and gold, was found in the first chamber of the great King Tut-Ankh-Amen. The rims of the wheels are cleverly bound with tough leather, the slightly worn surface of which indicates that the king probably held the reins on many state occasions, either at the review of his troops or when welcoming some neighboring potentate. The chariot was drawn by two horses, harnessed to a single shaft (not shown in the picture) with collars and bits gaudily jewelled. The driver was accustomed, when going into battle, to tying the reins to his belt, thus leaving both arms free for the use of his bow and arrows and spear. Tut-Ankh-Amen seems, however—from all indications so far found in his tomb—to have preferred

a life of luxurious ease to that of the warrior.

Quite skillful wood turning went into the making of these chariots. The six spokes of the wheels are made of three single pieces of wood, warped so that each piece served as a half of two spokes, the elbows thus made being joined to the hub. The wooden axle was saved from friction by the use of grease made from animal fats. The Assyrians were apparently the original inventors of the chariot, which was copied by the Egyptians. Only a few are in existence, the one found in Tut-Ankh-Amen's tomb being the most remarkable yet unearthed. Aside from its wonderful beauty and the great value of its jewel and gold decorations the present chariot is unique in having the axle placed in the exact center of the cart. All examples hitherto discovered have had the axle in the rear of the cart throwing all the weight of the vehicle and its occupants on the horses' shaft.

Object 2.—Treasure Chest. The above is one of the several elaborate treasure caskets found in the dusty interior of King Tut-Ankh-Amen's mausoleum. A single gem from its richly embellished cover would be highly treasured by any jeweler of the world. The outside is panelled with gold and ivory and bears inscriptions giving the king's name, and facts concerning his reign and family history. Most of the tombs so far excavated have contained these treasure chests, but few if any as beautiful as the one pictured above. Such chests were supposed to be taken by the king on his journey into the Hereafter. They contain the most exquisite specimens of the ancient jeweler's art—scarabs in gold and amethyst, pearl necklaces, lotus blossoms made entirely of diamond clusters, delicately wrought gold bracelets bearing holy charms, and sometimes hidden poisons. The present casket has not yet been opened, but that it probably contains great stores of riches is indicated by the fact that it's under guard, day and night, by Egyptian soldiers.

Object 3.—Candlesticks and Candle.

It may be that King Tut-Ankh-Amen was the only early Egyptian monarch able to spend his evening reading by the light of candles. This "find" is of unique import to Egyptologists, for hitherto no discovery has been made that would indicate the knowledge of candlemaking by these early peoples. While their civilization was remarkably advanced in many respects, the matter of illumination seems to have been neglected. The candlestick shown above is made of hammered bronze, in the use of which the Egyptians excelled. The peculiar image at the side is the "Ankh" sign, or "living image of Amen"—the great God. Tut-Ankh-Amen, being considered of divine descent, bears these two derivatives in his name. The artisan who designed the above candlestick probably sought to flatter the King by synecopizing this official insignia in the work.

Object 4.—Alabaster Drinking Bowl. From this bowl, beautifully carved from the white Egyptian alabaster—a soft, crystalline stone taken from the hills near Luxor—King Tut-Ankh-Amen and other rich rulers drank their wine and beer. (Yes, the Egyptians made beer from barley and grain, much as we make it, or did make it, today.) The chiselled scroll-work on the present bowl, which had lain covered with dust for thirty centuries, is said to be minutely perfect. The design on the outside of the receptacle represents the lotus leaf, the sacred flower of Egypt. The handles are of novel shape, a design unfamiliar to researchers. Further investigations into the records and hieroglyphs of the tomb may disclose its origin. It is possible that Tut-Ankh-Amen had among his workers an artisan of peculiar originality—some unsung, forgotten Cellini whose fame only now will begin to be sung.

Only wealthy persons of ancient Egypt were able to possess these elaborate drinking vessels, for they were difficult to make an extremely expensive.

(Copyright 1923, by North American Newspaper Alliance. All rights reserved.)

# Group 2 Of First Sketches To Arrive In America Of Objects Found In Tomb Of Tut-Ankh-Amen, Sketched At Luxor, Egypt, December 22, 1922



(Copyright 1922, by North American Newspaper Alliance—All Rights Reserved.)  
(Copyright applies to both sketches and captions.)

These beautiful witnesses to a civilization, in many respects surpassing our own, have been brought out of their gloom of buried generations by the recent Egyptian excavations of Lord Carnarvon and Howard Carter.

No. 1.—(Reading from Left to Right). Alabaster Vase with lace like handles.

The vase pictured above was found in a corner of the first chamber of King Tut-Ankh-Amen's tomb, covered with the dust of thirty-three centuries; 3,300 years ago—before the advent of Jesus, before Solomon, when most of the world we know today was wilderness—ancient Egyptian peoples were building palaces and pyramids, living in luxury and splendor, developing arts which today we are unable to duplicate. This vase is an example of this art. The marvelous lace-like scroll work carved into the stone handles is said to be microscopically perfect. All works of art of ancient Egypt were made for simple utility. In spite of the beauty of their workmanship they were never used as decorations, as we would use them today. The vase was probably used to carry water or wine, or may have been a receptacle for flowers.

Perhaps some favorite of the king filled it each morning with fresh lotus buds. Such objects were buried with the dead king for his personal use in the hereafter.

No. 2.—Bowls of Food. The picture above shows two pottery bowls filled with grain, from which the Egyptians made bread and breakfast food. They were found lying on the floor of the tomb, as pictured, although in most cases the food given to the king for his long journey is packed in air tight boxes, some times eight feet square. Probably these were supplications to the evil spirits. In other tombs, previously unearthed, great cases of food have been found—meats, fowl, loaves of bread, etc.—all mummified and sealed into the casket.

No. 3.—One of Three Gold Thrones. On the throne pictured Tut-Ankh-Amen probably sat, administering the laws of the land to his assembled ministers, or on a hot day, down along the banks of the Nile—sheltered from the sun by a golden canopy he may have mused upon the transiency of human fame. The throne is made of wood covered with gold plate. The seat is constructed of woven strips of linen cord. Leather and fibre thongs were also used in forming the seats and thrones. The back of affected by all gentlemen of cast and

heads, the tails forming the arms. Most Egyptian pieces of this nature are uniform in having the toes of the beast, forming the legs of the chair, always facing the front of the throne or chair. The one discovered in the present tomb violates this rule, and the explanation of the rarity will probably be found when the word-scrolls in the inner tomb are deciphered. The throne was taken from the King's palace when he died and placed in his tomb for use in the "Kingdom of the Great Spirit."

No. 4.—One of Two Gold-Plated Statues. The tomb of Tut-Ankh-Amen contained several statues, notably two large figures of the King himself which stand at the entrance to the first chamber. The one portrayed is made of cedar wood covered with gold. The feet are encased in solid gold sandals and on the head is the wig customarily worn by the Egyptians of all classes of this period. This wig-wearing custom apparently did not die out for several centuries. The Egyptian wigs were made of dried grass and human hair and often served the utility—in the King's wardrobe at least—of making a comfortable mat for the rather heavy crowns then in vogue. The rod in the figure's hand is simply a walking stick, another fashion of the times.

## King Tut-Ankh-Amen's Treasure.

No one will advantage in a financial sense by the discovery of King Tut-Ankh-Amen's tomb and the treasure buried with him. The "plunder" from the tomb and its various chambers will not be sold.

It has been stated that it will require about two years to restore, preserve and catalogue the articles, each of which must be examined scientifically, photographed, described and recorded with the most minute care.

A large portion of the discovered articles will be lodged in the Egyptian museum at Cairo. Licenses to explore and dig for relics of the past are issued by the Egyptian government only upon condition that Egypt retains for the national

museum the lion's share of the discoveries. All other articles are to be deposited in museums or authorized collections in the countries whence the expedition arises. The articles are not to be sold, broken up or destroyed.

It is probable that there will be some distribution of gems or other small articles among the personal staff of Earl Carnarvon. But of the portion that goes out of Egypt the British Museum will receive the largest share. The Metropolitan Museum of Art, New York, is also arranging to assume part of the expense in exchange for a share.

The search expedition, it is understood, was financed by the Earl of Carnarvon, assisted in part by several British societies; but it was largely his own expedition and his contribution to the history and science of the world.

# LUXOR WAKES OUT OF SLEEP OF LONG AGES

## Town Takes on Something of Habits and Customs of Main Street.

Valley Of The Kings, Luxor, Egypt. —(By the Associated Press.)— Luxor, like King Tutankhamun, has been roused from its repose of 3,000 years and is taking on something of the habits and characteristics of a twentieth century town. For ages a conventional stopping place for Nile excursion steamers and tourists, it has lately become a center for people of all classes, including students, college professors, antiquarians, doctors, undertakers, dressmakers and souvenir hunters. The newly found tomb of Tutankhamun is the magnet that draws them all. Tourists are attracted here out of curiosity but professional men and women, undertakers, embalmers, dressmakers and milliners, come in the hope of getting new ideas for their business from the mummy chamber of the ancient king.

To modern undertakers the skill of the ancient Egyptians in preserving their dead against the ravages of ages is a source of amazement and mystery, and many of them have applied to Howard Carter, discoverer of Tutankhamun, for the privilege of examining the Pharaoh's body when it is divested of its garb of gold and its bitumenized bandages.

### Embalming Cost \$1,500.

Embalming in ancient times was a much more elaborate and expensive process than it is to-day. It required three

months for its completion, and cost \$1,500. It was a luxury that could be afforded only by the rich. The ancients believed that mummification in this life was the only sure means of their resurrection in the next. Pathetic efforts were made by the poor to secure eternal life to their dead. American archaeologists in Luxor have lately found skeletons of humble peasants placed near the graves of the royal dead. Their relatives, it appears too poor to pay for embalming, placed the bodies near the graves of the nobles in the hope that their poor frames would partake of the sacredness of the nobility and thus rise with them in the next life.

The first step in embalming a body in Pharaonic days was to place it in a powerful saline solution for three months. The intestines were then removed by means of a sharp-edged stone, the brain, heart and liver were taken out and the body impregnated with myrrh, nectia, bitumen and aromatic oils. It was then wrapped in hundreds of yards of linen soaked in preservative. The anointing of the mummy was accompanied by prayers and incantations to the gods, led by the high priests.

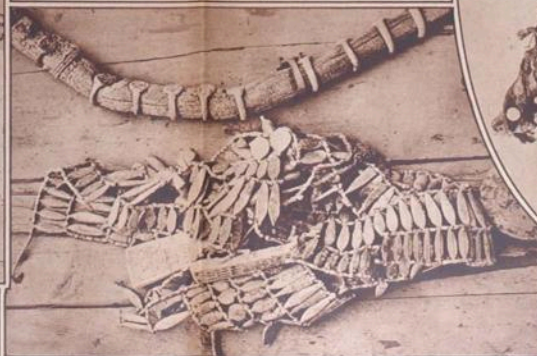
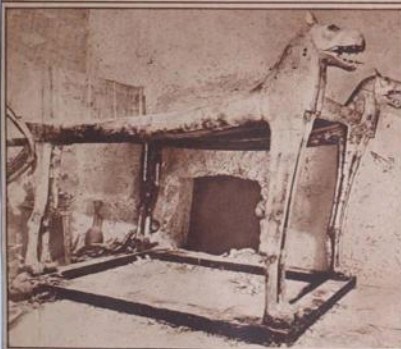
Herbert E. Winlop, director of excavation at Thebes for the New York Metropolitan Museum of Art, showed the correspondent a 4,200 year-old Egyptian princess that he unearthed last week in the Valley of the Queens. Allowing for natural emaciation and shrinkage the body is amazingly well preserved. The teeth and hair are intact. The neck, wrists and ankles bear a series of slight indentures, indicating according to Mr. Winlop, that her ancient highness wore a bracelet and anklets which undoubtedly had been stripped from her by tomb robbers soon after her interment.

The Royal mummy, Mr. Winlop said, was that of a woman of 22 or 23, who undoubtedly had been a favorite in the court of one of the Amennhotep kings. Her bosom and arms were delicately tattooed with heraldic figures, indicating her noble lineage. Over the lower part of the abdomen was a long seared brand which the American expert said probably had been inflicted with a red hot iron by the doctors of the time as a counter-irritant to relieve the pain due to an organic malady from which the princess suffered.



**ONE OF THE DEADLY WH- BARRED KING TUT-AH-NAM'S PASSAGE THROUGH THE WORLD BEYOND THE GRAVE: UPT HEAD**

Of one of the Typhon Beasts Which Formed the Side Supports of One of the Three Ceremonial Canopies. This Legendary Spirit of the Tonsils of the Underworld is Half Hippogryph and Half Gorgon, With Curly Legs and Feet. Its Teeth Are of Ivory, Between Them Two Sharp Claws. It Has a Long Neck, A Head Like That of a Lion, And a Body Like That of a Horse. It Is Said To Have Been Discovered by a Priest of Amen, Who Found It In a Cave Near The Temple of Amen at Karnak. It Was Then Taken to the Temple of Amen at Karnak, Where It Remained Until the Time of the Pharaoh Seti I, Who Had It Moved to the Temple of Amen at Karnak. It Was Then Taken to the Temple of Amen at Karnak, Where It Remained Until the Time of the Pharaoh Seti I, Who Had It Moved to the Temple of Amen at Karnak.





From "L'Illustration," Paris.

The tomb of Tut-ankh-Amen

THE LONELY VALLEY OF THE KINGS, TO WHICH THE WORLD'S EYES HAVE LATELY BEEN TURNING.

seen as a small speck in the lower center, surrounded by the sand wastes of the Lybian chain and the sinuous Nile in the upper right hand

extending to the horizon.

# LETTERS - AND - ART

LITERATURE DRAMA MUSIC FINE-ARTS EDUCATION CULTURE

## ART FROM THE EGYPTIAN TOMB

THE KING HAS BEEN REACHED. Sleeping in the midst of unimagined splendors which no eyes have looked on for thousands of years his seclusion has been rudely disturbed, and curious crowds that have required police control have tried to push into this holy of holies. There lies Tut-ankh-Amen under a canopy of gold that shows two challenging eyes which, to some extent at least, abash the prying inquirer. Slowly gathered up are the heaped contents of the two ante-chambers, implements placed there to serve the needs of their master when his spirit should rise and clothe itself in flesh again. No figures can estimate the splendors of the inner tomb, say the latest dispatches. "The gem-studded cavern of Ali Baba seems to have been a trinket shop in comparison, and Aladdin's lamp never revealed such treasures as the flashlights from the torches illumined to the lucky few who entered the mortuary chamber." The entrance was accomplished at midday, when the fierce heat of a desert sun acted as a protection for the Pharaoh against some of the prying eyes of tourists and those unwarranted by law to have the first look. The *New York Times* dispatch dwells on each lingering moment while Mr. Carter, the original discoverer of the tomb, hewed away the concrete of the sealed door and the privileged participants stood by with aching enthusiasm. When the barring door has yielded, Mr. Carter inserts a torch, and steps back, exclaiming after a prolonged look, "Ah! It tells the whole story!" The whole story is less than was hoped for. History in written records is not increased, but art gains immeasurably. In the unscientific but enthusiastic expression of the newspaper-writer the picture is set forth:

"Imagine a huge box with a curved top, a box four yards high and four yards wide and five and a half yards long, all covered with beaten gold studded with several fortunes' worth of the most precious stones of Tut-ankh-Amen's period, embossed with figures designed to appease the wrath of Tut-ankh-Amen's gods, ornamented at one end with exquisite figures of Nephthys and

Isis; imagine inside this priceless canopy another of the next size, all aglow with gleaming gold as bright as a new ten-dollar piece; imagine that golden gleam iridescent, not only with gems studded in it, but between it and the outer canopy; picture a heap of jewels worth a kingly ransom; imagine a heap of exquisite scarabs,

red, blue, green—nothing like them has ever been found before and probably will never be found again—and if after this one has the capacity, picture an absolutely priceless alabaster vase shaped like a chalice and the sides translucent with an interplay of alabaster fretwork on top, on which dainty cups are supported, and in the cups superb figures of Nephthys and Isis. But the imagination has not done its work yet, not by half; apart, a vase is heaped with amulets which money could not buy to-day, and over all these things and over the top of the second canopy is a black veil closely studded with golden crescents.

"Then if one has any mental alertness left to picture steep down in this gold-covered vault an exquisitely decorated coffin and inside the coffin the embalmed remains of Tut-ankh-Amen himself.

"It is a sobering thought, it is pathetic to think that the man who once ruled this region, at whose bidding thousands of weapons leaped free, is to-day but a mummy, a center of acute interest, whether the interest be scientific, morbid or ephemeral; in a phrase, a 'new stunt.' There is more than enough in this tomb to stir the emotions. It is sublime in its grandeur, appealing in its dumbness, exquisite in its art, rich in its magnificence, for the tale has not been told yet."

The interest aroused by this great discovery at Luxor has been as keen almost to the man-in-the-street as to the student and archeologist. The new discovery appeals "as an esthetic revelation of dazzling brilliance rather than an addition to our knowledge," says

Prof. G. Elliott Smith, author of the official catalog of "Royal Egyptian Mummies," in the *London Telegraph*. He continues:

"So far its effect has been to force the scholar and the man-in-the-street to take an interest in the civilization that was capable of producing such perfect works of art, and to ask themselves whether this prehistoric culture was really so exotic as it is commonly supposed to be, or whether, on the contrary, such achievements on the very threshold of a yet unenlightened Europe did not exert a far greater influence than it is usual to accord them."

"But at present we are concerned simply in considering what



London "Times" "New York Times" copyright by H. Langemann with the Earl of Carnarvon.

GUARDING HIS OWN TOMB.

Life-size statue of King Tut-ankh-Amen placed by the sealed doorway of his sepulchral sanctuary.

is the significance of the discoveries so far made; the furniture, which has never been surpassed in the perfection of its workmanship and exquisite decoration; linen of a fineness and a beauty of texture that have never been excelled; carved alabaster vases such as the world has never seen before; and statues that afford some justification for the ancient belief that they were, in truth, 'living images.' What is the meaning of all this lavish display of skill and beauty? Why was so much wealth poured into the hidden recesses of this desolate ravine, and the most exquisite products of the world's achievement in the arts and crafts buried out of sight in this strange necropolis? The true answers to these questions reveal the motive force that brought about the development of civilization and made Egypt the pioneer in its creation.

"All these elaborate preparations, the laborious and costly process of hewing the tomb out of the solid rock and furnishing it with such magnificence, were made because the ancient Egyptians believed that the King's body to be housed in it had been made imperishable. It was because they imagined when the body was embalmed the continuation of the King's existence had been assured that they provided him with food and raiment, the furniture and amulets, the jewels and the unguents, and other luxuries which he had been accustomed to enjoy, before he was taken to his 'eternal house' in the desolate valley of the tombs. There can be no doubt that in the early days of Egyptian history this naive belief was regarded in all seriousness as the simple truth. In fact, the thoroughness with which at first the Egyptians gave concrete expression to their faith in making material provision for every want that the deceased might experience could only have been inspired by the confidence that all these preparations were indeed effective. This conviction was deeply rooted in the practise of mummifying the dead, preserving the body so that it should become incorruptible and everlasting; and this was supposed also to involve the feasibility of the prolongation of the dead man's existence.

"The hope of survival was thus based upon the efficiency of the embalmer's art; and the extraordinary constancy with which for more than thirty centuries—for a span of years four times the length of time that separates us from the arrival of William the Conqueror in Britain—they persisted in their efforts to improve their methods and render more perfect this gruesome practise is a striking tribute to the fundamental importance of mummification to the Egyptians. The craft of the carpenter was first invented for the manufacture of coffins to protect the corpse; the stonemason's first experiments had for their aim the preparation of rock-cut chambers still further to ensure its safety; the first buildings worthy of being called architecture were intended to promote the welfare of the dead, to provide places to which relatives could bring food necessary for the dead man's sustenance, and a room to house his portrait statue—another art that was the outcome of the practise of mummification—which took his place at the temple of offerings and preserved his likeness for all time.

"These elements of civilization, the arts of architecture and sculpture, and the crafts of the carpenter and the stonemason, were thus direct results of the custom of embalming. But its influence in molding ritual and belief was no less profound and far-reaching."

At last, says the American Egyptologist, Prof. James H. Breasted, in the *London Daily News*, "the great civilization in a land which was the earliest home of this most refined culture ever brought forth by man is adequately revealed to us in works of supreme beauty and power. They form the greatest revelation of this kind ever recorded in the entire history of archeological discovery in any land." But the interest aroused has become an embarrassment. It is contemplated, to avoid the annoyance

caused by the incoming tourists, to close the whole tomb until autumn. One of the most recent dispatches in the *New York Times* reads:

"Nothing has been definitely decided, but it is quite on the cards that in a fortnight from now every entrance will finally be sealed till next autumn, and that the whole tomb will be buried deep under a few hundred tons of stones in order to keep it safe through the summer.

"As for the inner chamber, I told you yesterday of the dangers and apprehensions of allowing more visitors to go in. As a matter of fact, an examination discloses that some damage has already been done. In places the gliding of the wall of the tabernacle has been abraded and bits of the beautiful blue faience inlaying have been dislodged. It is nothing serious or irreparable, but it shows that while Lord Carnarvon and Mr. Carter are anxious to show every consideration both to government officials and to the general public, they have already strained courtesy to utmost limits of prudence.

"For the rest a brief survey of the situation will make things clear. You know how tremendous was the treasure disclosed on the first discovery last year, and you have read daily accounts of the wonderful articles as they were brought out of the tomb, and have seen photographs of many of them. It is now estimated that all that represents perhaps about one-fourth of what is now in sight. When I say in sight, it must be remembered that there are successive tabernacles yet to be opened, and, while all is conjectural, there is reasonable hope that they will contain the most precious, tho not largest, things of all.

"Moreover, Providence only knows what yet lies unsuspected in the two treasure chambers now opened, namely, the annex to the outer chamber and the room opening off the apartment containing the tabernacles which have not been explored. The wealth of the whole discovery is almost unrealizable."



Copyrighted by Wide World photo.

#### TO HOLD BACK THE TOURISTS.

Not many who are flocking to Egypt from all parts of the world succeed in passing this guard of the Egyptian Camel Corps.

**DOUBTING EGYPTOLOGISTS**—Scholars as well as "low-brows" are not averse from taking the joys out of life. Hardly have our first thrills over the discovery of the Tut-ankh-Amen tomb subsided than at least three Egyptologists express "lack of confidence in the importance of the discoveries made at Luxor." Two of them, says the *New York Herald*, doubt that Tut-ankh-Amen was buried there. Here we go:

"Professor Thomas Eric Peet of the University of Liverpool is one of those who think the excavations have not revealed the royal tomb. Georges Renf, French Egyptologist, believes that the real tomb was discovered in 1912 by Theodore M. Davis, an American. M. Renf considers the tomb at Luxor not a tomb at all but merely a hiding place.

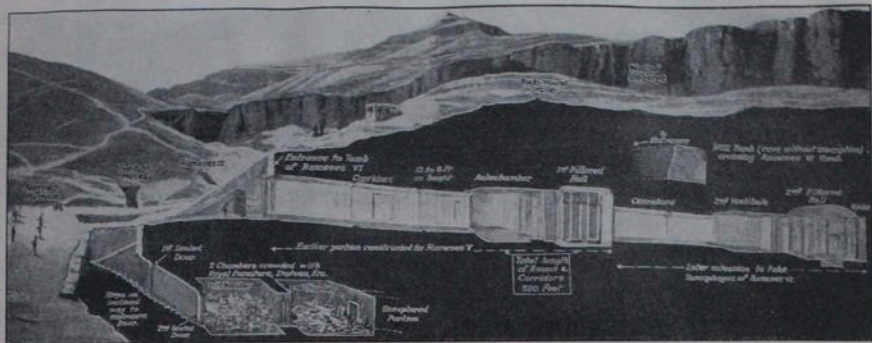
"The third authority, Professor Schiaparelli, director of the Egyptian museum at Turin, says that not one of the objects unearthed at Luxor is either 'particularly beautiful or new.' His idea of the tomb is that it is a kind of deposit box where some king who came after Tut-ankh-Amen gathered together objects from old tombs with the purpose of concealing them from robber bands.

"Altho these opinions must be discounted to some extent because they do not come from the scene of operations in the Valley of Kings they nevertheless constitute rather a heavy attack on the supposed splendor of the Luxor discoveries.

"Whether or not this Pharaoh was buried at Luxor, the discoveries have been successful at least in breathing life into his name. His chances of being remembered are just as good to-day as they would be if his mummy were to look serenely into the face of a motion picture camera to-morrow. Come what may, Tut-ankh-Amen now has a foothold on history that can not easily be dislodged."

(over)

# PERSONAL GLIMPSSES



From the "London Tribune." Copyrighted in the U. S. A.

## KING TUT'S SMALL BUT WELL-STOCKED TOMB BENEATH ITS BIG NEIGHBOR.

The King must have died young, it is argued, or he would have built himself a more extensive posthumous residence. The long-drawn-out tomb of Ramses VI, in the upper part of the picture, shows what a Pharaoh could do when he had plenty of time.

## TUT-ANKH-AMEN'S LEAP INTO FAME

THE MAN OF THE HOUR is undoubtedly that late King of Egypt whose combined residence and tomb was lately opened to newspaper reporters and others. "The most remarkable man in the world to-day is King Tut-ankh-Amen," flatly announces one newspaper editor. "Almost overnight he has obtained a position of eminence surpassing that of the President of the United States, or the Premier of Great Britain, or Charlie Chaplin, or Jack Dempsey. . . . His leap into fame has been even more spectacular than that of Dr. Coué." By way of corroboration of this very generally held opinion of the popular King, dressmakers are bringing out Tut-ankh-Amen costumes, an enterprising silk manufacturer is advertising, with an interesting variation on the name, "Tu-tank-ha-men" silks (Reg. App. for U. S. Pat. Off.), a whole act of a New York musical comedy has been out so that a new Tut-ankh-Amen episode can be put in, he is said to be slated for the movies, poems galore have been written about him, Margot Asquith has appeared in London wearing a gown draped, at least in part, after the manner of the popular young King's kilts, while babies, suburbs, restaurants, apartment houses, and parlor cars are being named after him, and it is confidently predicted that there will soon be a King Tut cigar. The simple fact is the King is all the rage, in spite of his age of some three thousand four hundred years. It was believed, when he was ensconced so snugly in his combined residence and tomb several centuries ago, that his life there would last three thousand years, after which he would come out and be about once more. He may have been four hundred late in getting out, comments a writer in the *New York Times*, but he is still sufficient alive so that he

Egyptian citizens to ransack the tombs of British Kings and Queens in Westminster Abbey and elsewhere." Thus is expressed, comments the *Toronto Globe*, "a general feeling of regret at what appears to be unnecessary desecration of Egyptian dead in the interest of archeology." However, it transpires:

A correspondent of the *Boston Transcript* sought the opinion of an old Egyptian patriarch, Hassan Mohammed Abdul Rasoul by name, who, with the help of many sons, tended his flocks near the Valley of the Tombs. His father, forty years ago, was one of the finders of the historic hoard of more than thirty royal tombs at Deir-el-Bahari, and he was taken when a boy to see this amazing collection. When asked what he thought of disturbing the rest of the ancient Kings he replied that it was an excellent thing to do, because old Kings were so valuable nowadays.

"But," he said, "I do not think Lord Carnarvon should take Tut-ankh-Amen away from the valley. Let him take the gold chairs and all the King's treasures, but leave the poor King in his grave. It would be good for Luxor, good for the Valley of Tombs, and good for the King. He is warm in his tomb, but in Cairo the rain comes. The King may get cold and damp if burial in the ground is necessary."

Rasoul appeared to be particularly sad throughout the interview, and the correspondent later learned that the real cause of the old man's grief was that his father had received £400 for disclosing the locality of the mummy hoard. But the father had buried the £400 and died without telling where the treasure was, and Hassan has spent most of his life digging up the farm to find the hidden gold.

Even more to the point is the assurance of Professor R. Jean Capart, a distinguished Belgian scientist, with a number of important titles, who attended the Queen of the Belgians on her recent visit to King Tut-ankh-Amen's headquarters on the Nile.

N O S D N H

minute study to its contents, but it has been said that the advantage which man has over the brute is his faculty of retaining a memory of his past. To day, however, the splendor of a past at first completely lost and then resuscitated in uncertain manner appears again before our dazzled eyes.

"Something more than the groans of neurasthenics and lunatics is necessary to convince me that the Egyptologists are violating the secret of death in a sacrilegious manner. Numerous

funerary texts of ancient Egypt give evidence of the anxiety which the dead displayed that posterity should cause their name to live. It was said that he lives whose name is proclaimed. A few weeks ago Tut-an-akh-Amen's name was completely forgotten outside of a small circle of specialists; to-day he is known throughout the world.

"In their stela the Egyptians used to make an appeal to those who were able to read them, in riting them to recite the formula, assuring to the dead all welfare in the other world. For long no one had read the formula drawn up for the Kings of the eighteenth dynasty. After centuries barbarians have come from far distant parts for which the Pharaonic geography had no names, and they have just read the prayers, which, according to the belief of the ancients, are capable of giving to the disincarnated spirits of the dead a real and truly happy life.

"Here, then, perhaps, is something to bring reassurance to sensible minds in regard to the feelings with which Tut-an-akh-Amen sees us enter his tomb."

It is a triumph of archeology, says the editor of the *Charleston News and Courier*, that this long-forgotten king should have attained the proud position which he holds in the world to-day. It is even more of a triumph for archeology than for King Tut, continues the editor: for archeology—

That sedate and supposedly dry-as-dust science which so many lively young people have so often scoffed at and the devotees of which are, in the popular view, old, bespectacled, fossilized professors, spending their time examining old bones and poring over ponderous tomes. Archeology has shown that it can make as potent a popular appeal as baseball; it can drive international politics and the latest murder mystery from the front pages; it can take a mummy and some antique furniture and make the greatest newspapers in the world send rush orders by cable and send to their correspondents and camera-men;

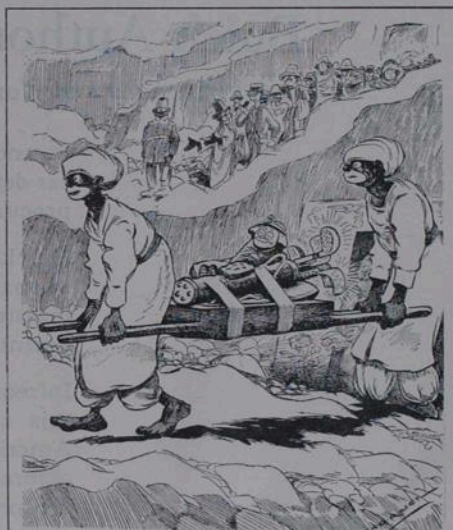
One particularly interesting thing in this remarkable discovery near Luxor, adds the *Springfield Union*, is:

The evident strength of the conviction in the Egypt of his day that Tut-an-akh-Amen wouldn't see the last of himself when he drew his last breath. The theory that Tut-an-akh-Amen dead and turned to clay would stop a crack to keep the wind away must have been as scarce as icicles in those regions of the Nile. Many evidences of this form of belief in immortality have previously been unearthed in ancient Egypt, but nothing before perhaps has revealed so well the then prevailing conceptions of the necessary preparations for it. With the Egyptians it was a certainty but very closely linked with the material things of earthly life. If in thought they distinguished between the spiritual and material, they had much difficulty in thinking of one except in terms of the other.

But there has been one important gain we fancy since Tut-an-akh-Amen's time. Immortality has become more democratic. We have few evidences that the old Egyptians made elaborate preparations for the future existence of any except royal persons. Possibly the view was that immortality was not for common people anyway; that only the high and mighty could hope to dwell with the gods. Humanity has progressed far from that conception, tho not so far as to eliminate entirely the theory of an aristocracy of righteousness, dependent somewhat on social prominence or race or creed.

In the meantime, and quite aside from the philosophical, archeological, religious and artistic aspects of the remarkable King's reappearance among us, Frances Wilson in the *New York Times* gives us this apology for popular interest, not to say vulgar curiosity:

When a Body, long deserted  
E'en when Cleopatra flirted  
With Mark Antony upon the sluggish Nile,  
Is brought back to human knowledge  
By some high-brow trained at college  
I, for one, would like to gaze at it awhile!



AT LUXOR.

If the correspondents do not weaken we may yet have Tut's jewel encrusted stork-sticks and mummified caddie taken from his tomb.



MARGOT A LA MODE

The noteworthy Mrs. Asquith, wife of the British ex-Premier, appeared in London recently wearing this gown, draped in the manner popular when King Tut ruled.

Branches in All Principal Cities—Dealers Everywhere



Pioneer Builders of Value-Head Motors of

Division of General Motors Corporation

And his transmigrating soul—where is it now?

Can it be that it's surviving  
And in Lord Carnarvon striving  
To get back into the Game, no matter how?

Surely Fancy is a laggard  
Nowadays in Rider Haggard  
When he dubs this disembodying dire disgrace.

After centuries of zero  
Tut-ankh-Amen's now a hero  
Having won the Marathon endurance race!

Having graced a splendid exit,  
Tut-ankh-Amen surely reeks it  
Great to occupy such journalistic space!  
And since tombs are dark and gloomy  
And museums light and roomy,  
He will certainly prefer the latter place.

I suspect that in a chorus  
Rescued mummies praise great Horus,  
Who restores them once again to sun and sky.

Tut-ankh-Amen will be happy—  
Yea, and find it pretty snappy  
When he occupies once more the public eye!

Vivifying the lost story  
Of an age remote and hoary  
Is a rôle to stir the haughtiest mummy's breast—

And the cynic Mind confesses  
That when once It evanesces—  
Archaeologists are welcome to the rest!

Reappearance so uncommon  
May well startle Tut-ankh-Amen  
But since Nature was the same long years B.C.

He'll be proud, though flabbergasted,  
To perceive how well he's lasted  
For his renaissance in 1923!

A friendly and intimate attitude toward the monarch is taken by Percy E. Newberry, a writer in the *London Morning Post*, who looks into the matter of the King's relations, ancestry, and personality somewhat as a later writer has recently probed into Queen Victoria and her time. Mr. Newberry, in his own words, puts together the information which has already been collected, in an effort to give some idea of "the place of the King who restored the worship of Amon in the history of his country." According to Mr. Newberry:

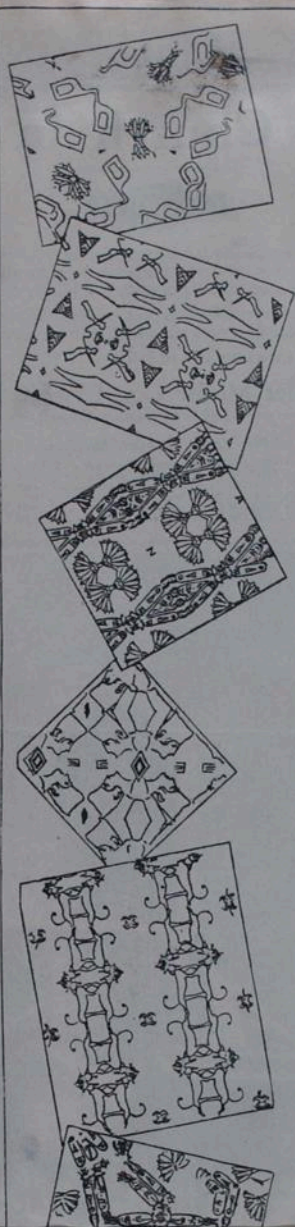
His predecessor, Akhenaton, "the Spirit of Aton," the famous heretic King of Egypt who overthrew the old worship of Amon and set up in its place the cult of the Aton, or Sun's Disk, abandoned the capital of his fathers, Thebes, and founded a new city at El Amarna in Middle Egypt. He reigned altogether about seventeen years, the last eleven of which he lived at his new capital, which he

tomb far back in a lonely valley to the east of El Amarna.

The third daughter, Ankhespaaton, "She lives by the Aton," married another Court favorite, Tutankhaton, "the living image of Aton," who now became, through his marriage to the hereditary princess, the lawful heir to the kingdom. Nothing is known about his parentage or early life, but it is probable that he remained at El Amarna a few months after his accession, for many monuments bearing his name have been found among the ruins there. During the seventeen years of Akhenaton's reign the persecutor had never been able to suppress entirely the old worship of the god Amon. The priesthood of this deity, it is true, were dispossessed, as also were the priesthoods of other local gods throughout Egypt. In Akhenaton's hatred toward the Theban god, he ordered that the name Amon should be obliterated on all monuments, and this command was actually carried out by the king's adherents. There can be no doubt that this remorseless persecution had the effect in the long run of estranging all sympathy with the heretic monarch, and the followers of Amon little by little regained their political influence. By the time Tutankhaton came to the throne their power had become so great that the new monarch resolved to revert to the old religion and transfer his Court to Thebes. It was then that he changed his name to Tut-ankh-Amen, "the living image of Amon," and his consort her name to Ankhesamon, "she lives by Amon."

Many monuments inscribed with the name of this Pharaoh are known. Mr. Newberry explains:

The greater number have been found at Thebes and El Amarna, but some have come from near the Fayûm in Middle Egypt, and others from as far south as Gebel Barkal in the Sudan. The most important inscription that has yet been brought to light is a large stela that was discovered by Monsieur Lefèvre on the 28th of June, 1905. On this monument the name of King Horemheb has been engraved over the cartouche of Tut-ankh-Amen, but the rest of the protocol has been left untouched. The historical part gives a record of the state of Egypt during the years which preceded the King's accession. A duplicate of this inscription has been found in the temple of Montu at Thebes, and other copies of it were no doubt sent to all the great temples of Egypt to commemorate Tut-ankh-Amen's services to local deities. The inscription relates that the temples of the gods and goddesses from Elephantine to [the Delta marshes] had fallen into disrepair, that their shrines had decayed and become "as mounds covered with weeds," and that their halls were as an open road. "The whole land was neglected by the gods," and when messengers were sent to Zahi (Phoenicia) to widen the frontiers of Egypt, they did



## PERSONAL GLIMPSES

Continued

to prosper again," says the writer, and quotes:

"When the days had passed over these things," runs our inscription, "His Majesty appeared on the throne of his father, and every land bowed down to his will." Seated in his palace the King made plans for the restoration of Egypt and its temples. "His Majesty took counsel with his heart and investigated every beneficent action, and searched for what is useful to his father Amon." He ordered to be made a beautiful gold image of the Theban god, another of Ptah, the god of Memphis, and erected monuments to other deities, "making emblems of gold from the tribute of foreign countries, and building temples anew to last for all time." These temples he endowed with daily supplies of food and provided them with priests "selected from the sons of the princes and officials of their cities." He increased their sacred vessels in gold, silver, copper and bronze.

He filled their barracks with male and female slaves and with spoils taken from foreign countries. He furnished the temples with silver, gold, lapis-lazuli, malachite, precious stones of all kinds, royal linen, white linen, gum, oil, frankincense, myrrh and perfumes. He also constructed sacred barks for the gods in fresh pine wood from the terraces of Lebanon and Syria. For the service of the Aton, Akhenaton had employed at El Amarna a numerous band of male and female slaves, female singers, and acrobat girls. Tut-ankh-Amen ordered these temple servants to be purified and transferred them to the service of other gods throughout the Nile Valley. Then it was that the gods and goddesses of Egypt became joyful again, and the people themselves "raised a great shout and danced for gladness."

Another important monument of this reign is the tomb of a Viceroy of Ethiopia named Huq. It is cut in the limestone hill, known as Kurnet Murrai, at Thebes, and was first visited by Champollion as far back as 1828. The walls are elaborately painted with scenes giving a record of Tut-ankh-Amen's relations with Ethiopia on the one hand and with Asia on the other. On the outer walls of the vestibule is a scene showing the investiture of Huq as Viceroy of Ethiopia by the Egyptian Chancellor in the presence of the King. The Chancellor presents to the Viceroy the gold signet ring of office, and this scene at once calls to mind the Biblical account of Joseph when Pharaoh "took off his ring from his hand and put it upon Joseph's hand and made him ruler over all the land of Egypt." After this ceremony of investiture the Viceroy goes to the temple of Amon, there to offer thanks to the god. In another scene he is depicted with his wife and family and some of his official colleagues. Among the latter is the sub-Governor of Ethiopia, the Mayor of Soleb, and the

That these gifts were presented to the King at Thebes is certain, for an inscription over the scene reads: "The coming from Ethiopia with all this good tribute of the choicest of the foreign countries, and the landing at Thebes by the Viceroy of Ethiopia Huq."

Beyond the information derived from this official's tomb, we know hardly anything about the foreign relations of Tut-ankh-Amen. Mr. Theodore Davis found in the Valley of the Tombs of the Kings a piece of gold foil with a scene impressed upon it, showing the King, who is accompanied by his Queen, smiting to the ground a Bedawin chieftain. To the left is figured the Divine Father Aq, who, on the decease of Tut-ankh-Amen, succeeded to the throne. Aq was an old man at the time of his accession, and his claim to the throne is not at all clear. Apparently Tut-ankh-Amen left no issue, and the legitimate line of eighteenth-dynasty Kings came to an end with him. It is remarkable that in Huq's tomb and elsewhere the cartouches of Tut-ankh-Amen have been generally erased except for the name of Amon, and that the name of Horemheb has been substituted on most of his public monuments. This seems to prove that Tut-ankh-Amen's memory was not held in esteem by his successors, who probably regarded with suspicion his sincerity in reverting from Aton to Amon worship. Only one dated monument of his reign is known: this is a piece of linen inscribed in his sixth year. It is possible that it is a piece of one of his mummy wrappings, and, if so, the probability is that he reigned only six years.

## Say Pharaohs Believed Gold Image Would Come To Life In Hereafter

Luxor, Egypt, Jan. 27.—(United News)—Egyptian pharaohs, wishing to dodge manual labor in the next world, attempted to take servants along with them, in the opinion of Egyptologists who are engaged in excavating the tomb of Tutankhamen near here.

The small gold figure of a man, perfectly formed, which was unearthed, led to this belief.

The experts are of the opinion that the rulers of Ancient Egypt believed that the gold image would come to life in the hereafter.

It has been established that Pharaohs believed that the gods of the afterworld would call upon them to do hard work for eternity.

## Exquisite Paintings In Old Egyptian Tomb

Found on Wooden Casket in Burial Place of Ancient Egyptian Rulers—Some New Words To Be Added to Egyptian Language as Result of Discoveries—Supposed Documents Turn Out To Be Napkins.

By Arthur E. P. B. Weigall.  
(Copyright, 1923, by North American Newspaper Alliance.)

Luxor, Egypt, Jan. 26.—(By cable)—The speculation concerning several squares of folded material found in the first chamber of the tomb of Tutankhamen was dispelled today by Dr. Alan Gardiner, English authority on ancient Egyptian language. Script on this material, which looked like papyrus, was believed to be documents of historic interest, but on examination it turned out to be simply folded table napkins.

Dr. Gardiner found many short inscriptions on several objects in the tomb which were illuminating. Some desert,

oddly-carved boxes found here with an interesting list of contents have added some new words to our knowledge of the Egyptian language. Dr. Gardiner and Professor James Henry Breasted, director of Oriental Institute of the University of Chicago, are here working in the Cairo Museum.

Dr. Gardiner tells me that in spite of a good deal of wild talk, the funeral paraphernalia of Tutankhamen really is the most wonderful collection of treasures ever found in Egypt. He was particularly struck, he says, by a wooden casket, on the sides and lid of which were the most exquisite paintings like the finest miniatures representing hunting scenes in the tomb which were illuminating. Some desert,



E  
N

queen," and the poet  
remember that she  
dressed all in green  
cuffs of the audience  
of two songs in par  
ger yet in the star  
States. One of them  
McGinty."

# Rulers of the Land Died Son- less and Crown Was Passed Around Promiscu- ously—Dampness Causes Damage in Sepulcher.

By Arthur Weigall.

(Copyright 1923 by North American  
Newspaper Alliance.)

Luxor, Egypt, Jan. 23.—In previous  
dispatches I referred to the bad state  
of preservation of a beautifully painted  
casket found in the tomb of Tutank-  
hamen. Apparently, dampness pene-  
trated the chamber, owing to the low  
position of the sepulchre in the valley  
bed, and a consequent percolation of  
occasional rains. The face of one of the  
two statues of the Pharaoh has split  
open. The royal robes, removed yes-  
terday from the tomb, are in the most  
fragile state, while other objects re-  
quire most careful handling. It is a  
question whether the moisture has  
penetrated into the sealed inner cham-  
ber and whether the mummy or  
mummies will be found rotted.

Professor Petrie thinks that the  
great quantity of objects found in this  
tomb are due to the fact that Tutank-  
hamen was childless and therefore  
had nobody to whom he could hand  
down his possessions. This seems far-  
fetched but nevertheless an out-  
standing and extraordinary fact is  
that this period of Egyptian history  
is peculiar in the recurrent failure of  
the male line. Akhnaton had no son.  
He left his throne to Sem-  
kara, who, dying childless, was suc-  
ceeded by Tutankhamen — former  
chamberlain. He, too, was sonless,  
and he was followed by his queen,  
Nefertiti, who also died without  
heir, leaving the throne to Horem-  
khepsut, the generalissimo of his army.  
Again, it seems to have been so.

Biblical students will find in  
the confirmation of the Exodus  
the death of the first born, or at any  
rate, a likely basis for the fact on  
which the tradition grew. I notice too  
that in the great inscription of Tutank-  
hamen, to which Horemheb also in-  
scribed his name, reference is made  
to the fact that Egypt was overriden  
with plagues and that the Gods had  
neglected the land. Egypt, indeed,  
was in a bad way during that period,  
and even if the Biblical story of the  
plague is doubtful, we can well under-  
stand on what the story was based.

nothing it was in the tomb of  
the death of King Tut. If we could really  
hope that additional light might be  
regain a king might reasonably go on  
adding room to room, and burrowing

Tor

Earl of C  
Pharac

BY

London

POLL

POSES

M

reac

the

ankl

from

London

Hamburg

S.

cc.

g's Rest  
Tomb

id. "Just as

both par-

proper ob-

indicates that

prohibition

possessing the

as an in-

person, who

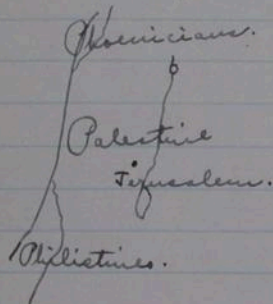
they

to indiffer-

treacher was

## Israel.

Palestine was not a favorable country. There were no harbors and very little garden land. Palestine was also practically surrounded by hostile nations who were forever harassing the country.



Israelites took Egyptian musical instruments with them to Canaan.

Mosque of Hebra is the place of entombment of the Patriarchs.

Dead sea is the lowest body of water in the world.

Fall of Jericho accomplished with the aid of musical instruments.

The greatest hymnal is the book of Psalms  
Parallelism found in every verse. where  
originated =

June 1/23

To be copied

Greatest Hymnal Book

of Psalms

Psalms Parallelism  
in verses.

most perfect form  
Foundation of all form  
in psalms. ~~of form~~

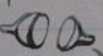
Those who give most  
perfect things to world  
are generally Jews.

Here is where meaning  
and significance  
cadences arose.

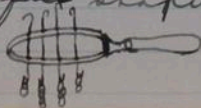
## Musical Instruments of the Bible.

The most primitive Hebrew instrument was the hand drum (taph) also called tabret and timbrel. This was a ring covered with a tightly drawn skin. Sometimes pieces of metal were hung around the ring, as in the tambourine of today, of which the hand-drum was the prototype. It was played chiefly by the women but sometimes by the men (I Sam. 10, 11, 5). It was also used at weddings (1 Mass. 9, 39), in public processions (II Sam. 6, 5) and in ordinary song (Gen 31, 27). It was also used in religious music of a joyous or popular character (Ex 15, 20) (Ps. 81, 2) but probably not in the temple at Jerusalem as it is not mentioned in II Chr. 5, 12. The Egyptians and Assyrians also had a double-headed drum, which was carried by a strap about the neck, and which was struck on both ends.



Their cymbals were bronze disks. They were sometimes bell shaped like the figure.  They were used to mark time. (Ezra 3, 10).

Their castanets (qv) corsets (av) (II Sam 6, 5) were instruments for shaking like the Egyptian sistras.

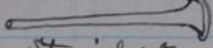


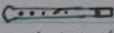
The halil (Ps. 5, 1) was a flute, but whether a single or double flute or a horizontal or oblique flute is not known. Halil may have referred to all three. There were many varieties in use among the Egyptians and Assyrians. Probably the first flutes had only two or three holes and were made of reeds. But later they were bored from wood and even from metal and ivory, and had seven holes. The halil was peaceful and was employed at feasts (Is. 5, 12) in funeral processions (Is. 160) in pilgrimages (Is. 30 29) and to accompany dancing (Mt. 11, 17). It was also the instrument of mourning (Mt. 9, 23).

The ugab, argan, was a sort of pan-pipe, a development of the flute. (Dan 3 5, 7, 10, 15). It was the pastoral instrument and consisted of from seven to nine reed pipes of various lengths and thicknesses tuned to a simple scale.

The magrephah was a pipe work with bellows of hide and a wind box with ten openings into each of which was fitted a pipe with ten holes so that one hundred tones were available. The accounts of it vary widely and its existence is sometimes doubted. It may have been used in the later temple. The ugab

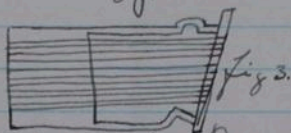
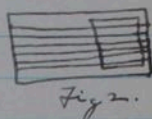
was an instrument of joy (Job 21, 12) (30, 31) and was used in praise services. (Ps. 150, 4) The Sumpunga of Dan 3, 5, 15 incorrectly translated dulcimer was probably a great skin bag with two reed pipes, one used to fill the bag with air and the other a sort of chanter flute with finger holes.

The shophar (keren) horn (Joshua 6, 5) (I Chr. 25, 5) was primarily a simple ram's horn and was crooked in shape. This later became the shopharoth which was a straightened metal instrument. These were chiefly used for secular purposes viz - battle alarms (Judges 3, 21) at assemblies (I Sam 1, 33) at coronations (II Sam 15, 1). In very early times it was used to announce the Jubilee (Lev 25, 9) and at the approach of the Ark (II Sam 6, 15). The basorah was the priests trumpet. It was about a yard long and  little wider than a flute.

 Straight trumpet straight pipe.

It was used to announce festivals (Nu 10, 23, 36) and in other rituals. One hundred twenty priests blew basorath in Solomon's temple (II Chr 5, 12). They were really not musical instruments but instruments of noise (Ps 98, 15, 16). They were blown "in blasts" "solenly" and "with vibrating tones".

The stringed instruments of the Bible were of two kinds, harps and lyres. The strings were at first plucked by the fingers but later a plectrum was used. The lyres (generally called harps and psalteries) were of the general shape shown in the figures. They were probably a development of the old Semitic lyre of this shape. This developed in Egypt to the shape of figure 3.



They are mentioned in (Dan 3:5) (Is. 14:11) (Amos 5:23) (Amos 6:5) (Is. 5:12). The invention of the lyre is attributed to Jubal (Gen 4:21). The number of strings varied from three to ten (Ps 33:2) or eleven or even more. The dulcimer was a variation of these. There were also large harps like the Egyptian ones of this shape. There is also every reason to believe that the Hebrews used the lute (Egyptian type).



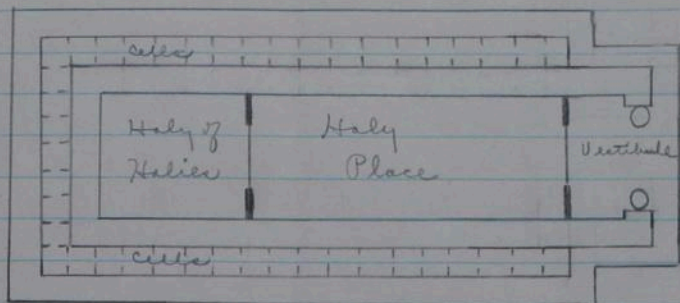
The lyre was both a religious and secular instrument of joy. (Gen 31:27) (Is 24:8) (Is 5:12) (Ps 33:2 43:4).

The psalttery however was the solemn instrument used only for religious purposes. (Amos 5:23) (Ps. 144:1) It was a

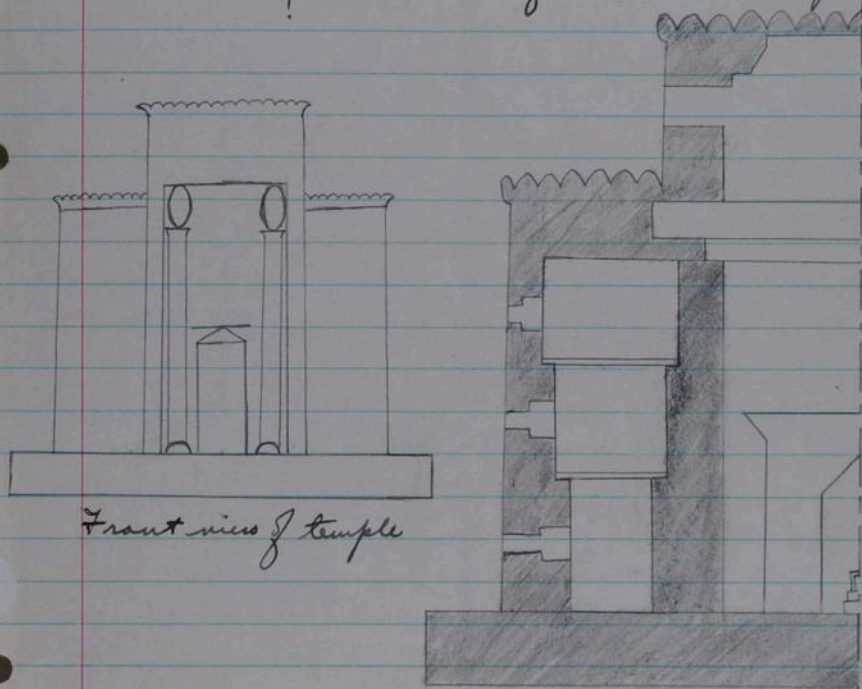
dedication to sing popular melodies to its  
accompaniment (Am 65) (Is 14, 11) The  
Psalterium is also believed to have been  
the higher pitched instrument.

The sackbut was not a Hebrew  
instrument but is mentioned in Daniel 3:710.  
It was a sharp-toned triangular instrument  
with four strings. It may have been  
the same as the Egyptian hand harp, a  
cross between the lyre and the harp.

# Salomons Temple



Ground Plan of Salomons temple.



Front view of temple

Interior elevation of left side of temple.

## Solomons Temple.

The temple area was enclosed by a wall made of three layers of stone with a layer of cedar planks. The floor of the court was paved. The approach to it led thru several gates. The dimensions of the temple itself were, length 104 ft., breadth 32 ft., and height 52 ft. The building faced the east.

compare  
position  
Egyptian temples

The interior was divided into the Holy place, the Holy of Holies and the Vestibule or porch. The walls were massive probably about eight feet in thickness. The roof was flat and likely had the customary parapet.

The main building was surrounded on all sides by a series of chambers arranged in three stories. The breadth of these increased from 5 cubits at the lowest story to 7 cubits at the highest story. The Holy of Holies was devoid of windows and must have been lighted artificially.

In the outer court was the altar of burnt offering. This was made of brass 20 cubits square and ten cubits high. The next object of prominence was the molten sea, a basin of bronze

five cubits in height and ten cubits in diameter. The purpose of the vessel was to furnish water to the priests in their ablutions preparatory to the performance of their service. Immediately before the porch were the two hollow bronze pillars, Tashim and Boaz. They were eighteen cubits high and twelve cubits in circumference. Some claim that they supported the roof and others that they were merely ornamental.

There were ten bases and lavases, small basins supported on a movable framework.

In the holy place the principle furniture was a series of ten tables of shewbread. These were in the form of an altar. Toward the wall of the holy place were ten lamp stands, (candle sticks) together with their lamps, five on each side.

There were also many small pieces of furniture as the following; Tongs and snuffers for trimming the candle sticks; Censers and fire pans for the purpose of carrying off burned portions of wicks; Shovels to be used in removing ashes from the altar; Spoons probably shallow basins;

flagons in which the wine of libations  
was kept and basins for the pouring  
out of the same wine. Flesh hooks,  
pronged forks, for stirring and  
removing contents of boiling pots.

Between the holy place and the  
Holy of Holies was a wall of cedar  
wood with a door of slide wood.  
There was a curtain or veil before  
this partition.

In the Holy of Holies the only  
object was the Ark of the Covenant  
overshadowed by two gigantic  
figures of cherubim ten cubits  
high each with outstretched wings  
so that their tips touched in the  
center over the emery seat, the  
free wings extending to the side walls  
on either side. The ark was placed  
in the middle, yet so that the handles  
by which it was borne were visible.  
Within the ark were the two stone  
tablets of the law. It ~~was~~ is not likely  
that the brazen serpent was kept in  
the Holy of Holies or in the temple.  
It must be admitted, however, as possible  
that this was the case, as it was  
destroyed during Hezekiah's reformation.

The temple worship was under the direction of Asaph, Heman and Jeduthun. The singers were all Levites. They were arrayed in white linen with cymbals and psalteries and harps. They stood at the east end of the altar and with them an hundred and twenty priests sounding with trumpets.

The singing was antiphonal the different choirs answering each other and the congregation.