

Lecture on motion —

Analysis. —

Introd. Subject important & interesting.

- There is nothing we know of absolutely at rest in the universe.

1. Name and define certain varieties of motion.

Uniform. Doubtful if there can be long continued absolutely uniform motion. — either rectilinear or curvilinear. —

Uniformly Accelerated & retarded motion.

Uniformly

motion in resisting media.

Rotary motion. Rhythmic motion.

All sorts of rotary - vibratory - & undulatory motion. — Where the same motions are constantly repeated in equal intervals of time..

2. Motion has no independent ~~static~~ existence.

there must be something moved. —

The nearest approach to abstract motion is the progressive motion of waves - of water - of sound - of light.

— When we speak of sound moving at the rate of 1100 ft per Sec. there is ~~no~~ material thing moving at that rate but simply a disturbance in the particles of air is propagated at that rate.

3. The motions of large masses of matter are very familiar to us all, & we think we know a good deal about such motions - but it often is the case that the more we examine the subject, & we find out, that ~~where~~ there we know but little about it. — We will find comparative rest, where we thought there was motion - there there was rest. — de. de. —

4. Let us regard motion as it is often spoken of, as fast or slow.

These terms relative - Illustrate - locomotive

How we may regard it as moving fast & how slow.

A watch hour hand - example of a slow motion.

- Sinking of the oil in the lamp.

Uplift of crust of the earth - a fast motion in Cos.

Planetary motions.

Apparently slow, - really fast.

Even light may be regarded as moving slowly - ∇

5. We have no innate sense of motion -

Motion is change of place - when we see bodies in different places at different times, ~~in many cases~~ we know that there has been motion - or we actually see a change taking place - in very many cases we do not know, which body has moved, or whether the observed has moved or whether all have moved.

Illustrate from the motions of the heavenly bodies.

Illustrate from deceptions in motion of cars & canal boats.

5. The coexistence of motions.

Moon & sun & planets - - The earth - sunrise & sunset:

As many motions as forces - each force must produce its full amount of effect.

But a point can only move in one line at the same time.

Illustrate what is meant by coexistence of motions.

1. We notice each one by itself.

Light waves - Remarks on.

Heat waves -

13 Illustrate by Radiometer. -

14 Chromatope. -