The diseases of humanity are in part acute, and in part chronic.

Acute diseases are rapid illness-processes of the abnormally mistuned life principle which are suited to complete their course more or less quickly, but always in a moderate time.

Chronic diseases are those which (each in its own way) dynamically mistune the living organism with small, often unnoticed beginnings. They gradually so remove it from the healthy state [i.e., they gradually remove it from the healthy state in such a way and to such an extent] that the automatic life energy (called the life force, life principle) which was ordained to sustain health, opposes them. It does so, both in the beginning and in their continuance, with only imperfect, inexpedient, useless resistance. The life force, which cannot extinguish these diseases by its own power, in and of itself, must allow them to proliferate and it must allow its tuning to be more and more abnormally altered up to the final destruction of the organism.

Bordering sporadic diseases are those acute diseases that seize many persons with very similar complaints from a similar cause (epidemically). These diseases tend to become contagious when they spread over thickly congregated masses of people. Then fevers arise. Each epidemic disease has a fever with its own nature. Since every case of disease in a given epidemic has the same origin, the disease puts all those who have fallen ill into the same kind of disease process. When left to itself, this disease process ends either in death or recovery in a moderate period of time. Epidemic diseases are not-infrequently occasioned and engendered by the calamities of war, floods and famine.

Some acute epidemic diseases are particular acute miasms that recur in the same manner and are therefore known by a traditional name. They either befall a person only once in a lifetime (such as smallpox, measles, whooping cough, mumps, or the old, smooth, bright red scarlet fever of Sydenham, etc.) or they are diseases that recur often in a rather similar way (such as the levantine plague, coastal yellow fever, Asiatic cholera, etc.).
Influenza A virus
Influenza B virus
(influenza C) virus

Organism

§12
It is the disease-tuned life force alone that brings forth diseases.

§13
…Disease is not to be considered as an inwardly hidden wesen separate from the living whole, from the organism and its enlivening dynamis …

§73
…Since every case of disease in a given epidemic has the same origin …
§73
... the disease puts all those who have fallen ill into the same kind of disease process.

§100
In the investigation of the symptom complex of epidemic or sporadic diseases, it makes no difference if something similar has ever appeared before under the same or any other name.

The novelty or peculiarity of such a contagion makes no difference, either in its examination or its cure, since the physician presupposes that the pure image of each and every presently reigning disease is new and unknown. He must explore it for himself from the ground up...

This is all the more the case here since each reigning epidemic is in many regards a phenomenon of a particular kind that is found, by exact investigation, to deviate greatly from all former epidemics (which have been falsely labeled with certain names).

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Influenza A virus
all extant Influenza A viral strains are derived from the 1918 pandemic strain
H1N1*

RNA-virus, Orthomyxoviridae

H*N*:
H - hemagglutinin H1-18
N - Neuraminidase N1-9
- viral coat proteins
Antigenic Shift
Antigenic Drift
H1N1 strains
H2N2, H3N2 strains
New Strains

Influenza A virus derived from 1918 pandemic strain H1N1*

H* N*:
H - hemagglutinin H1-18
N - Neuraminidase N1-9
- viral coat proteins

Genetic Diversity / random migration & reassortment

Human & Other Host Species
Ducks / Wild aquatic birds, Pigs, Horses

mutations
reassortment
Wild Aquatic Birds
Anseriformes
Ducks
Geese
Swans
Gruiformes
Coots
Rails
Charadriiformes
Gulls
Terns
Wading/Shore birds

Influenza A virus
derived from
1918 pandemic strain
H1N1

Genetic Diversity / random migration & reassortment

Antigenic Drift

Antigenic Shift

Existing lineages:
- human epidemic/endemic H1N1
- porcine (pig) enzootic H1N1
- reassorted human H3N2 lineage
- porcine enzootic H3N2 lineage

Human & Other Host Species
- Ducks / Wild aquatic birds
- Pigs, Horses

(reassorted H2N2 eliminated w/in 11 years of appearance)
Influenza A virus
derived from 1918 pandemic strain H1N1

Antigenic Drift

Antigenic Shift

Virulence:
Contagiousness
Pathogenicity

Human & Other Host Species
Ducks / Wild aquatic birds, Pigs, Horses

Genetic Diversity / random migration & reassortment

Influenza B virus

Humans & Seals

Antigenic Drift

Genetic Diversity / random migration & reassortment

slow evolution

Influenza C virus
(rare)
(mild or no disease)

Genetic Diversity / random migration & reassortment

Antigenic Drift

Humans, Pigs

very slow evolution

Potential for evolution of new strains

H5N1
“Avian flu”
Influenza A virus
H5N1
H7N3
H7N7
H7N9
H9N2
...

Wild & Domestic fowl
Equine Influenza ("horse 'flu") enzootic to horses

\[ \text{H7N7 equine-1} \]
\[ \text{H3N8 equine-2} \]

Equine Influenza A virus

Potential for evolution of new strains

Genetic Diversity / random migration & reassortment

Antigenic Drift

Antigenic Shift

Horses (humans, dogs)

\[ \text{? 1299 - Europe} \]
\[ \text{1872 - North America} \]

Influenza A virus

rhinovirus ("common cold")
adenoviruses
enteroviruses
paramyxoviruses
early/mild cases of flavivirus (dengue, West Nile virus)

(over 200 viruses implicated in symptomatic "flu-like" illness)

of physician-submitted specimens to the CDC from "influenza-like illness" in 2012-2013,

23% (73,130 / 311,333) were positive for influenza A or B virus

(77% - over 3/4 of physician-submitted specimens represented viral illnesses other than influenza A or B)
England
1675
(Annals of Influenza
or Epidemic Catarhal Fever
in Great Britain
from 1530 to 1682
Theophilus Thompson, MD, FRS
London, Sydenham Society, 1851)

Constantinople - Europe - England
1658

England
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(Annals of Influenza
or Epidemic Catarhal Fever
in Great Britain
from 1530 to 1682
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