No. 412

AN

INAUGURAL DISSERTATION

ON

Malaria

SUBMITTED TO THE

President, Board of Trustees, and Medical Faculty

OF THE

UNIVERSITY OF NASHVILLE,

FOR THE DEGREE OF

DOCTOR OF MEDICINE.

BY

W. F. Cook

OF

Mississippi

1857

MEDICAL JOURNAL OFFICE,
NASHVILLE.

In selecting this subject which I propose to discuss in a brief manner I do so with due consideration feeling my inability in entering an arena the sustaining pillars of which are magnates of the highest order of intellect and scientific endowments. Yet at this enlightened epoch of Medical knowledge the greatest and most scintillating ever known in the annals of its history the subject under consideration embodies an issue of adequate importance both to the scientific and illiterate world. And after carefully perusing different treatises written by various authors. And investigating ideas expressed by illustrious professors as regards the causes and peculiar types of Malaria. It is plainly perceptable that there exists a wide dif-

ference of opinion and unharmonizing anthem relative to this subject. And if I an humble aspirant for those honors which my renowned predecessors long years ago bore away from the classic halls of their Alma mater should fail in the following lines to reflect that credit due to the significance of the subject perhaps my Esculapian juvenility may avail me somewhat as a Shield from the severer censures of criticism. — I now propose to elucidate in a brief manner as possible a few opinions in regard to Malaria I believe it to be produced in two ways first by vegetable decomposition Secondly by high protracted Solar heat upon confined waters I will first attempt to prove that it may be produced by high protracted Solar heat upon

confined water For instance there are islands where no vegetation exists and where water lies superficial under the Earth here we find Malaria quite prevalent — In the great prairies of Western Texas where there is but little decayed vegetable matter for there is no vegetation but grass and as soon as it becomes dry the hunters set them on fire and the vegetation is destroyed yet we find some Malaria there and the time when it is most prevalent — is during the Summer months when the dews are quite heavy during the night — and a warm sun during the day — In hilly countries during the Summer months when the earth is dry and parched a heavy rain

suddenly descends and the water that is not absorbed by the hills runs off in the vallies The water on the hills are rapidly evaporated and malaria is produced on the hills and the vallies being overflowed are rendered quite healthy I might perhaps bring forward many other proofs and side-other illustrations to show that malaria is produced in this way Yet I consider it unnecessary And I do think that malaria originates specially from one other cause and that cause vegetable Decomposition You may ask what proof we have to maintain the belief I think we have many and substantial ones Let us unfurl our sails and glide gently down the current of

The great Mississippi and its
up tributaries Lowlands or
bottoms where I have had some
little experience here we find
a vast amount of vegetation
undergoing decomposition and
what is the consequence we
find Malaria remarkable prevalent
the timber is very thick and
there is also a vast amount of
cane from the small switch cane
up to heavy blue cane twenty
feet high here we find it im-
possible for the rays of the sun
to get to the earth Yet the
leaves and other vegetation are
constantly decomposing and Ma-
laria prevails to a great extent
Every settler gets as near a river
or lake as he can if he cannot

get near either he will get as near a bayo or even a slash. they say it is bad ther near them than off from them and it is a notoriously fact that an overflow is always set down as healthy from the fact that it washes away decaying vegetable matter. Last spring the whole bottom was submerged and the entire and immediate vicinity has been remarkably healthy up to the present time. Again in the settling of new countries we find Malaria quite prevelent during the process of the decomposition of cut timber and decaying matter but as soon as the decomposition abates it ceases almost entirely. The draining of Lakes & ponds is often followed by Malaria because

the organic matter previously lying quiescent in its bed is brought into a renewed movement of chemical reaction by exposure to the sun's heat & the digging of canals has often been noticed to produce similar effects The prevalence of miasmatic fevers in the latter part of summer and in autumn may be ascribed in part to the circumstance that vegetable life has now very frequently run its course and plants are consequently exposed to decay A long continuance of dry weather followed by warm rains seems favours the evolution of miasmata probably because the plants which perish in the drought suffer speedy decomposition under the conjoined influence of the heat and moisture One of the

most interesting circumstances in relation to miasmata is their apparent affinity for moisture water appears to have the property of dissolving and retaining them whether in a proper Liquid State or in that semi Liquid form which constitutes fogs and mists numerous facts may be explained upon this principle It is probably owing to this cause that heavy and continued rains lessen the Miasmatic influence They wash the atmosphere clean of the noxious effluvia Hence too the greater the influence of floods and of deep water which dissolve the Miasm as it is generated and prevent its escape by holding it in solution the greatest danger is after the waters have so far subsided or been so far evaporated as to be unable to dissolve the grounds of the

vegetable putrefaction it is said that
in tropical latitudes the commencement
of the rains is rather promotive of disease
partly perhaps by bringing down the
miasmata from the upper air also
by favoring the decomposition of the
dead plants upon the surface of the
earth. Upon the principle of this assimi-
may also be explained the influence
of running water in obviating the
effects of marsh effluvia. Salt marshes
are thought to be less unwholsome
than fresh, and some suppose that
a mixing of salt & fresh water
is peculiarly injurious but it is
unnecessary to adduce any especial
influence of the salt in these instances
if salt marshes are less malarious
than fresh it is probably owing to the
action of the tides by means of

which in the former the results of the vegetable decomposition are carried off by the flood, while the waters in the latter being more frequently stagnant becomes saturated with the poison and permit it to arise with the exhalations from their surface At the points where the salt & fresh waters meet there is often more stagnation than either above or below—because the flux & reflux of the tides are less than in the latter position— and the steady downward current of the former is wanting Persons on board of ships and and those on the sides of lakes opposite to the source of exhalation are much less exposed to disease than those at an equal distance by land because the intervening waters dissolve the miasmata in their passage