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## **Edme Mariotte Manuscript: A Treatise of the motion of water and other fluid bodyes**

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cracks or fine small holes in ye rock, ye other places remaining dry or but very little moist, and this happens after great rains: there also a place where there is a great vault, where always distills many drops of water, but these proceed from a mass of water wch is directly above.

There is at these gutters in many places where ye top is in ye form of a vault, and there is not above twenty or thirty feet of earth above, ~~twenty or thirty feet of~~ where it may be observed ye small gutters of water wch are there made pass thro' ye small chincks between ye beds of stone and that they proceed from rains because they do not appear but after great rains, and they do not continue above a fortnight or three weeks after it hath ceased to rain, and it may be easily judged that ye others drying up of fountains are of ye like sort.

The summer of ye year 1681 in France was very dry, wch made ye wells and fountains to be in many places almost dry, and altho' it was sufficiently cold at ye end of October and beginning of November, ye waters continued to diminish which would not have happened if ye water had been made by vapours elevated from subterraneous places and condensed by ye cold of ye surface of ye earth. There is a hole in ye caves of ye observation which had always had water from ye year 1668 till 1681 but ye dryness of that year wholly dried it up and there was not as yet a drop of water in February 1682, altho' there had been much rain during many days at ye beginning was sufficiently rainy, ye water did not return at September, nor during to whole years.

If there is cast upon ground that is firm and difficult to be penetrated by water a great quantity of stones, sand and mortar mixed with earth to about ye hight of ten or twelve feet there will be a small fountain ye lowest place wch will always run, if ye ground be an acre or two big.

[[marginalia]] toise is foot [[/marginalia]]

I saw this effect in a place where had been heaped up mortar to ye hight of about three feet its superficial content might be somewhat less than 500 toises, it came to pass that ye rain water wch falls upon this place and upon ye tiles of ye neighbouring houses was retained by this plaster and could not pass but by little and little transversely and being not able to penetrate ye pavement and firm ground wch was under it, it would at last turn towards a low place where it might make a continued small stream of water;

Sometimes ye earth in mountains is so disposed that ye water wch enters there can resort to ye air and run between two banckes or between ye earth and ye rocks and then it cannot be discovered but by making trenches at ye same side sufficiently deep, and it happens sometimes that by that means there is gathered together a reasonable quantity of water, as it is practised in many places.

There is some fountains wch come from ye middle of mountains, and they are made when ye rain water having found a passage tro ye sandy earths and cracks of ye rocks to two thirds or 3/4 of ye inward parts of ye mountain, there finds a continued bottom of smooth hard earth or some continued beds of rocks, where ye water stops and is



heaped up to a considerable hight, wch pressing on all sides by its weight, makes at last some passages towards ye base of ye mountain thro some cracks in ye rocks. These fountains during dry weather last longer than others and may be charged with divers salts and other matters wch they there may ~~diffuse~~ dissolve.

There may be seen sometimes fountains almost at ye top of mountains, and some maintain that some are at ye very top; I have observed such a fountain in a mountain two leagues from Dijon, it has plenty of water: and one is very near it seems to be about 40 feet high from ye earth to ye top where ye ridge is very stiff; but if you look at ye mountain far off it is seen to extend itsel<sup>e</sup> with a sufficiently sensible ridge more than 100 toises long and 200 broad, now if that space there falls sufficient rain to maintain that fountain as shall be hereafter proved.

There are lakes at ye top of some mountains wch arrive from small riv<sup>o</sup>lts this may happen, because that ye earth round about ye lake is more elevated than ye level of ye water and of a great extent. Mr. Caffini told me there is in Italy a sufficiently great lake in ye top of a mountain where there is an elevation of ye earth round about it above half a league long wch would be sometimes covered with snow ye drains of wch with that of rain water may easily feed ye lake, wch ought to have at ye bottom a firm earth or continued rocks it is there ordinarily very cold whence it is that ye water doth not oxhale considerably.

There is a fountain at mont-valerien about two leagues from Paris: ye land that produceth it is about 100 toises longue and 50 wide: it is near to a house about a third of ye ~~alge~~ hight mountain, there is also many other places of ye same sort in wch there is found water and where there is made small running fountains by digging ye earth seven or eight

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