

saw some creatures, which tho they had the figures of little animals, yet could I perceive no life in them, how attentively soever I beheld them.

The same day at night, about 11 a clock, I discover'd some few living creatures: But the 3^d of June I observed many more which were very small, but 2 or 3 times as broad as long. This water rose in bubbles, like fermenting beer.

The 4th of June in the morning I saw great abundance of living creatures; and looking again in the afternoon of the same day, I found great plenty of them in one drop of that water, which were no less than 8 or 10000, and they looked to my eye, through the Microscope, as common sand doth to the naked eye. On the 5th, I perceived, besides the many very small creatures, some few (not above 8 or 10 in one drop) of an oval figure, whereof some appear'd to be 7 or 8 times bigger than the rest.

The 6th, those animals were as before; but the 8th, the oval animals were increased in number, swimming among the said very small creatures; and now they were all very near of one and the same bigness. The 9th, the oval creatures appear'd yet in greater numbers, but the very small ones, in less number; and now, using a particular method in observing, I noted, that the feet, wherewith the animals were furnish'd, did plainly move, & that with an incredible swiftness: And me thought, that now & then I saw, that the globuls, of which I said that the greatest part of their body was made up, were not perfectly round, but that every one of them had a prominent point. These creatures were, to my eye, eight times smaller than the eye of a Loufe.

Some new Observations made by Sig. Cassini and deliver'd in the Journal des Scavans, concerning the two Planets about Saturn, formerly discover'd by the same, as appears in N. 92. of these Tracts.

ONE of these 2 Planets, which is distant from the Center of Saturn 10 diameters and a half of his Ring, maketh his revolution about Saturn in 80 days. He was discover'd at the Parisian Observatory, A. 1671. about the end of Oct. and in the beginning of Nov. in his greatest Occidental digression, and after many cloudy days he ceased to appear, for a reason which was then unknown, but hath been discover'd since. For, after that many revolutions of this small Planet had been observ'd, he was found to have a period of apparent Augmentation & Diminution, by which period he becomes visible in his greatest Occidental digression, and invisible in his greatest Oriental digression.

It is certain, that this vicissitude of Augmentation and Diminution,

minution, of appearing and disappearing, doth not befall him upon the account & by reason of the variation of his Distance from the Earth and from the Sun: For, besides that in one revolution of this Planet about *Saturn*, he varies not the hundredth part of his distance; his most sensible diminution appears then, when being in the upper part of his circle he descends towards the lower part, approaching to the Sun and the Earth.

'Tis also certain, that this vicissitude doth not befall him from the different exposition of this Star to the Earth and to the Sun, as it comes to pass in the increase and decrease of the Moon, forasmuch as in this great distance he is always exposed to the Earth and the Sun, as the Globe of Saturn himself, whom we always see full of light, without a sensible difference between the Oppositions and the Quadratures.

But it seems, that one part of his surface is not so capable of reflecting to us the light of the Sun which maketh it visible, as the other part is. Whence we may conjecture, that the Globe of this Satellit hath some diversity of parts analogous to that of the earth, the one part of whose surface is cover'd by the Sea, which is not so fit to reflect from all parts the light of the Sun, as the Continent which maketh up the other part: So that this Planet by a conversion about his Axis, or by an exposition of the same Hemisphere to Saturn (much after the manner of the Hemisphere of the Moon to the Earth,) sometimes turns to us the part analogous to the Continent, sometimes that part w^{ch} answereth to the Sea.

This vicissitude of *phases* in this Planet was the cause, that he could not be found since he was first discover'd in the year 1671: till the midst of *Dec.* 1672; after which time he disappeared once again until the beginning of *Febr.* 1673; at which time, having been observ'd 13 days successively, he afforded us the opportunity of determining the period of his motion.

Since that time, as often as Saturn hath been distant enough from the Sun to enable one to discern this Planet, he hath always been seen in all his Occidental Digressions, and in the Conjunctions with Saturn, which have since happen'd with a great latitude, as well in the upper part of his circle as in the lower, & he could never be seen in his Oriental digressions, where he remains invisible in every revolution of 80 days for a whole month together.

He begins then to appear 2 or 3 days *before* his conjunction in the inferior part, and to disappear 2 or 3 days *after* his conjunction in the superior part. And sometimes after he hath begun to disappear in a Telescope of 32 foot, he hath been sought for with a Telescope of 45 foot, but in vain. The

The sequel of the Observations hath confirm'd, that the period of 80 days, which was yet somewhat doubtful in the second discovery, is sufficiently just, and that he doth not anticipate 9 revolutions, which are made in 2 years, but by one whole day; & that in the Conjunctions with Saturn his Latitude augments on the one and the other side, according as the ring of Saturn enlargeth it self; though the line of his motion is not parallel to the circumference of the ring: w^{ch} was noted in the first Observations.

The other Planet, which was discover'd about the end of the year 1672, hath his greatest digression from the Center of Saturn only 1 diameter and 2 thirds of his Ring, and the period of his revolution about Saturn is 4 days and a half, but more precisely 4 days, 12 hours, & 27 min. His Latitude augments also according as the Ring enlargeth, and at the present that the largeness of the Ring is greater than the Diameter of the Globe of Saturn, he is to pass in the Conjunctions without touching neither Saturn nor his Ring. Yet notwithstanding we have not yet been able to distinguish him in the Conjunctions either in the upper or lower part of his circle; but only in his greatest, as well Oriental as Occidental, digressions. And this Satellit being alternately one day towards his conjunction, and the other day towards his digression, he is ordinarily not seen but every third day, and rarely 2 days together, when it falls out that at the hour of Observation he is in the middle betwixt the conjunction and digression.

Lastly, the apparent magnitude of these Planets is so little, that posterity will have cause to wonder, that their discovery was begun by a Glass of 17 foot.

And forasmuch as we have endeavour'd with the same attention and care to observe, whether there be not the like Planets about *Venus* and *Mars*, and have not been able to find any, even then when their distance from the Earth was 20 or 30 times less than that of Saturn, it may thence be concluded, that *Venus* and *Mars* have no Satellites, whose surface enlighten'd by the Sun and expos'd to the Earth is not 20 or 30 times less than that of the two Satellites of Saturn, and less capable of reflecting the light of the Sun.

An Account of some Books:

I. *PHARMACOPOEIA Collegii Regalis Lond. A. 1677. in fol.*

THis new Edition, reviewed by the Royal Colledge of the Learned Physitians of *London*, hath these considerable advantages over the former, that great care hath been taken, not only to correct the many Typographical faults committed in the