in every body in the system becomes equal: this state of density or compression of the caloric contained in a body, constitutes what is commonly called its temperature.

All the properties of this element show that its particles are infinitely small, have no sensible adhesion to each other, and that they have a very rapid, continual motion in all directions, which appears to be essential to them. From what has been said, caloric appears to be a material substance essentially fluid, and many facts concur to prove, that it is the only body which can with propriety be called so in nature; consequently the cause of fluidity in others. The effects of cohesion, a no less universal principle than gravity, are restrained and modified by the agency of caloric; and, as without inertia, all the celestial bodies would be drawn together into some one part of extended space, so, without *heat* all matter in the universe would become a congealed and concrete mass, and fluidity, organization, vegetation and life could have no existence. G.

## To the Editor of the Belfast Magazine.

On the Oriental Emigration of the Irish Druids.....Proved from their knowledge in Astronomy, collated with that of the Indians and Chaldeans. From fragments of Irish MSS. By Lieutenant General Vallancey, L.L.D., F.R.S.M.R.I.A: &c.

## CHAP. M.

THE following scheme is copied from the manuscript in Mr. Astle's possession, to which I have added two other spheres, viz. the *Flachamhnas* and the *Ti-mor*. In the centre is *Tu-lamk*, the earth (Heb. Talam.)



The names of the spheres are partly Latin, and partly Irish: those of Mer-

cury, Venus, Mars, Jupiter and Saturn are Latin, although we shall bereafter find they had Oriental names for these planets; that of Venus has been already explained (No. i, page 17) Jupiter is expressed by Jop; in Irish *Peitir* is a thunder-bolt, whence probably the name Jupiter. Jop may be derived from the Chaldee YAPA, to be beautiful, as his other name in Irish is *Fursa*, i.e. fire.

The word Speir, the heavens, a sphere, an orb, is Chaldean; (Chaldean SPHEIR, a spire, a sphere; Persic, sipihur, the celestial sphere, the heavens) and from the celestial alphabet used by the Chaldeans to mark the constellations in the saphir, which were afterwards used as numerals, and then as literary characters, the same word Sepher came to signify writing, numeration, a book, a letter; and to this alphabet I think Jacob refers, when he bade his children read in the book of heaven what must be the fate of you and your children : and Isaiah also compares the heavens to a book rolled up.

Next to Saturn is the speir n'ardrinnacn'Edengan, i.e. the sphere of the high stars of paradise (Chaldean gan h'Eden, i.e. the garden of Eden, paradise, the dwelling and happiness of the blessed after this life. Arabic, Eden, paradise; Pers. Ginnah, paradise (Herbelot.) It is also named in Irish Aingan and Daingan (Arab. Ain, paradise.) Gort alain, the garden of joy ; Abhalgors aoibhinn, the pleasant orchard ; Lubhgoir solamhsach, the pleasant fruit-garden ; Parathais, the ecstacy of fruits : which are all synonymous.

Madagascar, it is said, was peopled by a colony of Phenicians: amongst other words, the natives have preserved danghitoi for paradise. An danghitsi zaie makita ambracale Zanhar. In paradise we shall see God continually. (Madagascar catechism, printed at Rome 1763.)

The celestial alphabet being intended to represent these constellations, in which they placed their paradises or gardens of pleasure, what could be more natural than to name each character, after a certain tree, which we shall show was the case, in another part of this essay. Being names of trees, they were all consonants; and when adopted for literary characters, it became necessary to mark the sound following each consonant : the Chaldeans did so by points below the character; others placed the marks upon the letters, as in the Sanscrit, Ethiopic, &c, and this appears to me to be a strong argument for vowel points having been introduced when these characters became numerals and letters, that is, with the origin of letters.

The next sphere is the Com-artha, the signs of the Zodiac, i. e. the stationary signs; Chal. Kom, to rise, to stand; Aorth, a sign; as in Genesis, 1. 16. Sheni maorth two luminaries, which the paraphrast explains by two signs. In the Gloss. Rab. Salam, Aurtha is translated the rising of the stars; from hence I think the Druidical airith, to number, i.e. to cast up by the signs, which were used as astronomical characters, and afterwards as numerals, (whence Greek, Arithmos, number ;).....The Chaldee Kom signifies a station, place, a space in which a body stands: the parts of the heavens or airs have the Kom or station (Hutchinson,) Arab. Tukoum an arch of the Zodiac, (Castellus) Chal. Mekom, the Torrid Zone, which is the Sun's station, (Bates) Kawm, in Arabic, signifies a mansion or dwelling, whence probaly Kawm ardha, the halls or palaces or mansions of the sun ; and Keym, a station. Musoudi, an Arabian author, says that the word Ardha signifies the Zodiac, but the more antient Arabs named it Thoul. Hence we find in Irish Comhardha and Tallagrian, the Zodiac, the halls or mansions of the sun ; whence the Persians named burja asuman, the house or station of the sun.

The Irish commonly write it Comartha ar neamh, the signs in the heavens. The adjunct neam is probably Sanscrit, as we find it in the Tibetan. Nama, the heavens (Georgius Alphab. Tibet.) Comhartha is also used at this day, as Cur do comhartha, put your mark, sign this paper, which the illiterate peasant always does with a cross. Lhuyd has extracted a paragraph from some antient Irish manuscripts, which merits attention; it is in his Archwologia, Tit. x. and was probably a fragment; but as it alludes to the Tau, so often mentioned in scripture, it is worthy of notice; the words are, tangadar fos an focuilsi bhid gan comhartha ar bioth as Eirin, go Huilidhe, agus ataid an tri phunc accomhalta an diaidh cim,

dochionn nac bhfuil riachdanachdorra, i.e. there came also a people without marks or signs of any kind, out of Iran, to the Jews, and they were marked with three points united after that, because there was no necessity for more distinction.

I have followed Lhuyd and Shaw in translating Huili, the Jews. In Vin-cent's voyage of Nearchus we find there was a famous tribe of Arabs named Beni Huili; they possessed the coast of Karmania from Gomeroom to Cape Bardistan. But I suspect the word was Huididhe, a name of the Hundi or Hindoos, according to Postellus "Hudi seu Hundi aut Indi, alio nomine dicti sunt, quasi directores et Judaei laudatoresve. Unde doctrina Alcorani quae partiin ex eorum doctrina, sicut ex Egyptiaca et sacra est con-fiata, dicitur Huda, id est, Directio seu Judaitas. Judæos enim crebro, remota Jod litera, vocat Hud. Hundia itaque seu India, est tanquam Judea Orientalis." Post. de Orig. p. 69. "They are otherwise called Hudi or Hundi or Indi, that is directors and Jews, or praisers. Whence the doctrine of the Alcoran, which is composed partly of theirs as also of the Egyptian and sacred, is called *Huda*, i. e. Direc-tion or Judaism. For it often stiles the Jews, *Hud*, rejecting the letter Jod. Hundia or India therefore means Eastern Judea." As the passage above quoted cannot refer to Ireland, I have translated Eiran, Iran; the word frequently occurs in the ancient history of Ireland.

The three-pointed sign united, is on the forehead of *Creeshna*, the Indian Apollo, in the eighth Avatar, playing on his pipe to the *palis* or shepherds of *Mathura*, of which a good engraving is given by Mr. Maurice in his first volume of the History of Hindostan. And as that gentleman observes, it is not unlike the mystical letter schin formerly worn on the head-phylactery or Tephelim of the Jews.

The next is the Speir lan-mor no tairise, that is, the sphere of great joy and extacy, or the second paradise; beyond which the Druids placed their Flachamna, or heaven of heavens, (pronounced flackhoona and in vulgar use at this day) this flack-mena, i. e. heaven of heavens, of the Persians, and the fuluk l'aflak of the Arabs, by which they mean the

highest heaven, the residence of the Omnipotent (Richardson) the Ti-mor, the great circle, God of the Druids (Shaw's Ir. Dict.) Speir Tairise no speir lanmor says our Irish author, is fuicsnehi don talamh mar a dubhramar an speir lan-mor do bheith, i. e. the sphere of joy or extacy is next the Zodiac, i. e. the signs, and it is without stars, as we have said that sphere should be. Is not this the doctrine of the Brahmans? "May Brahma lead me to the great one! (the *Ti-mor* of the Druids) there the sun shines not, nor the moon and stars, those lightnings flash not in that place; how should even fire blaze there? God (the Ti-mor) irradiates all this brightsubstance, and by its effulgence the universe is enlightened."

Our Druids, like the Brahmans, reckoned fourteen heavens in all. The nine next the earth were called Nuathack, plur. Nuathaigh, which is translated heaven : it signifies nine heavens, from nui or naoi, nine, and teac, a vault or dome, or cupola. It is the Arabic and Persic nuh-tak, the ninth heaven, says Richardson, from tak, an arched building, vault, canopy, &c. The Jews named this sphere Arabot, the highest heavens where God has his most glorious throne; the ninth sphere.

All these orbs floated, according to our Druids, in *Neumhagas*, i. e. cclestial ether; the Brahmans express it by *Akass*.

by Akass. The Greek philosophers admitted many more beavens, just as their different hypotheses required. Eudoxus supposed twenty-three; Calippus, thirty; Regiomontanus, thirty-three; Aristotle, forty-seven; and Fracastor; less than seventy.

The scheme here presented agrees neither with the Grecian nor Egyptian, and must have been imported from India or Chaldea.

Nor does the Druidical scheme agree with Ptolemy, who made but seven spheres.

In all these systems the earth was placed in the centre; I believe it was universal with the Oriental astronomers. Thales who was a Phenician, placed the earth in the centre. His scholar and successor, Anaximander, taught the same, and that it was spherical, as was taught in the Irish schools, which we have already shown. Pythagoras, who flourished 535 years before Christ, famous for his studying in Egypt, and Plato who did the same, both placed the earth in the centre.

Anaximander is said to have invented the Gnomon, but Costard proves he only introduced the knowledge of it into Greece, it being of Babylo-nish original. Although our Hibernian Druids imported the Chaldee name for a sun dial, and consequently knew its use, we have no authority to say they knew how to calculate an eclipse. Thales, it is said, had calculated an eclipse of the sun, but Herodotus tells us, he could not tell the day when it would happen, and only confined himself to its falling out within the compass of that year. How little the doctrine of eclipses was understood long after this, appears from hence, that in the 19th year of the Peloponnesian war, "Nicias," says Pliny, "the Athenian General, ignorant of their cause, was afraid to permit the fleet to set sail, and this was the cause of their ruin; for every thing was ready, and they were upon the point of sailing, says Thucydides; the moon became eclipsed, for she was then at the full, upon which the Athenians, looking upon the thing as ominous, persuaded the generals to stop. Nicias too said, they should not think of stirring till the twenty-seven days were past, during which the augur had ordered them to stay. About the same time, likewise, we find Athens in deep concern at a solar eclipse.

The next figure in the Irish manuscript is copied from Ptolemy, describing the cause of eclipses, wherein there is this remarkable circumstance; the northern hemisphere is called *uachtar*, or superior; and the southern, *ichtar*, or inferior.

The ancient Indian geographers divide the globe into two hemispheres, the superior and inferior. The superior, or northern hemisphere is the reign of delight, beauty, and abundance, and in it *Indra*, the God of the firmament, (the *Ionn-dara*, or Cylclic Belus of the Irish Druids) presides with an army of *Soors*, or good genii, holding his court on the refulgent summit, which they denominate *Meru*, by which in fact they mean the north pole (the *Mir* of the Druids, who named it *Mirgart* or the head of the pole of the world.) The inferior, or southern hemisphere, that is, the region immediately under them, they represent as a body of darkness and horrors, inhabited by evil demons or Assoors. They suppose the sovereign of that region to be Yama (the Saman of the Druids) the Indian Pluto, who is also judge of departed souls, that receive their future doom at his infernal tribunal.

The Malayan utara, i.e. the North resembles in sound the Irish uactar; it is probably a Sanscrit word. The Malayan is indebted to the Sanscrit for a considerable number of its terms. (Marsden, Asiat. Researches, vol. 4.

The Druidical synonymous name for the north pole, *Mulgari*, is from the Chaldean Mahal, from hal, higher.

## To the Editor of the Belfast Magazine.

SIR, A S you have undertaken to give the public an account of many of the Celestial Phenomena which are to occur in each ensuing month, I beg leave to suggest to you an addition to the information contained in your first number, which I presume may be of some service.

Government have it in contemplation to procure a complete and accurate map of this island, and as there are many of the principal towns in this kingdom, whose latitude and longitude are imperfectly known, I have reason to think that if an account of such eclipses of Jupiter's satellites\* as may be visible to us, were inserted every month in your Magazine, the extensive circulation of it would enable many persons to co-operate in the design of government, at least with respect to the longitude of the different places. In the following column is a list of such eclipses of the satellites of Jupiter as will be visible to us during the month of October.

## I am Sir, yours, &c. &c. X. Newry, Sept. 9th, 1808.

\* We are happy to find that the writer of the above article is solicitous concerning a subject which he will see noticed in the fifth paragraph of our third page; and we take this opportunity of again inviting Correspondents to furnish historical accounts of the different Towns in their vicinity.....stating their public buildings, commercial consequence, state of arts,