

**STUDY IN**  
**HINDU SOCIAL POLITY**

BY  
**CHANDRA CHAKRABERTY**

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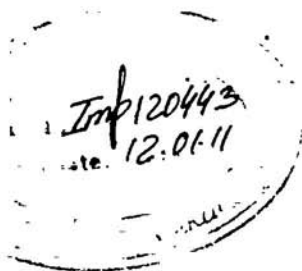
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TO MY BROTHER  
**SRIJUKTA RAM CHANDRA CHAKRABERTY.**

THIS BOOK IS AFFECTIONATELY DEDICATED.

## PREFACE

These chapters are the outgrowth of the materials I gathered to write a cultural history of the Hindus. But at that time the excellent monograph of late Romesh Chandra Dutta, *The Civilisation in Ancient India*, was not known to me. Its perusal has convinced me that there are not yet sufficient new materials available to add another book on the subject. So I am giving these hastily-drawn sketches to the public, believing that some of them may prove to be useful and interesting to the students of ancient Indian history.

**The Author.**

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**A**

**STUDY IN**

**HINDU SOCIAL POLITY.**

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**I.**

**PHYSICAL GEOGRAPHY OF INDIA.**

Physically India has not been always as she appears to-day. Changes there have been as changes are inevitable in the process of existence. Where the mighty towering Himalayan range stands, there rolled the waves of the Atlantic and over that vast region now known as Tibet, Assam and Burma, the Pacific and Atlantic oceans joined each other in mutual embrace. Not only the Gangetic and Indus Deltas were under the bottomless sea, but even over that immense area now known as Rajputana, the waters of the Atlantic surged their waves against the Aravallis. In that ancient Paleozoic age India was connected with Africa in the west and in the south with a continent extending over to South America. The coral islands, Laccadives, Maldives, Chagos, Mauritius and Madagascar bear testimony to the disappearance of the Indo-African Continent. The Western Ghats were the mountain partings of the waterways. No river falls into

the Arabian Sea except the Narvada and the Tapti and they force their way into the sea by denudation. Andamans, Java, Borneo, Philipines, Australia, New Zealand, Japan and the numerous islands are but the mountain tops of the submerged Pacific continent, connecting India with South America. It is also known as the volcanic belt, or the circle of fire. The Vindya range was the kernel of the Indian peninsula, though not so degraded and shrunken as to-day, due to weathering and erosion. And round it extended the Gandavana continent, linking India with Africa.

Then out of the stillness of the slow process of sedimentary formations of the Permian period, issued tremendous volcanic cataclysms that shaped the outlines of Indian topography, almost as we see it to-day except the growth of the Indus and the Gangetic deltas. Deccan was formed with vast and extensive lava deposits to the depth of thousands of feet and covering over two hundred thousand square miles of land area alone. The lava flow might have been on a far grander scale and now lies buried under the Arabian Sea. The Gandavana continent became split up into two parts, India and Africa and became permanently separated from each other by the Arabian Sea and the Indian Ocean. And during the Mesozoic age the majestic Himalayan range became gradually lifted up to its eternal ice-capped height. The Rajputana Sea retreated and became slowly filled up with the silts of the Aravalli chains. And the Central Asiatic Plateau, Tibet, Assam and Burma were formed. Thus the principal orographical landscape was framed. The separation of Andamans from Aracans and the submergence of the great Pacific continent is of recent Geologic time, possibly Pliocene period, if not

later. The island Rameswaram was connected with the main land even four centuries ago.

The Indo-African continent is not a mere geological speculation. There are many incontestable proofs to support the contention. Bathy-orographical map shows clearly a submarine bank still connecting India with Africa, And the water of the Arabian Sea is always a few degrees higher in temperature, for the bank prevents the cold Antarctic current from passing through it. The similar marine Cretaceous fossil deposits in the Nevada valley, North Africa, Syria, and even Southern France clearly indicate a land connection. 'While in Southern India the fossil deposits are different and very similar to those found in East Africa, Australia and South America and even the flora and the fauna resemble remarkably, thus proving a land barrier between the Indian Ocean and the Arabian Sea, as well as the existence of the Pacific continent. And moreover not only paleontologically, but also in the present distribution of plants and animals, there is unmistakable demarkation of two continental origin and both converging in India. There are numbers of genera and species, typically australoid lacking mammalian genus, with the only exception of platcanthomys, and chiefly consisting of low forms of vertebrates as reptiles and batrachians, still confined in the Indu-Malyan region, while the western division abounds in well-developed mammalian types, which are not only found in Central and Northern Africa, but are met with also in Madagascar. Any divergence can be easily accounted for by the independent course of evolution since the two continents became separated from each other perhaps in the Eocene period. This is also the Hindu tradition of *Jambu Dwipa*.

But, in the main Gandavana, there has been hardly any radical change excepting the weathering and denudation, since the early Paleozoic times. No marine fossils have been found, excepting in the Himalays when the marine limestone of Numilitic age, of comparatively recent formation has been raised to 20,000 feet above the sea level. The upheaval of this gigantic mountain system however, has fashioned the topography of the country, as it stands to-day.

The wealth and fertility of India are mainly confined in the Indus and Gangetic valleys. On the shores of the Ganges, from the days of hoary antiquity, have been established the principal centres of Indo-Aryan civilisation, opulent cities and marts of art, industry and culture. Two thirds of the agricultural production of India owe their origin to the fertilising, silt-bearing waters of the Indus and the Ganges, and in the vast and extensive basin that separates the main streams of these two mighty soil-renewing river systems, there cannot be found a boulder, not even a pebble to rob the soil of its richly uniform alluvial surface. And no river can be compared in its fertilising and wealth-producing result with the Ganges except perhaps the Nile. Virtually the Ganges feeds half the population of India. No wonder the Hindus venerate the Ganges as a sanctifying river, and from its rise in the Himalayas to its mouth in the Bay of Bengal, every inch of ground and each drop of water is sacred. The alluvial deposit is so rich and deep, for it needs only the earth to be scratched and seeds to be deposited for things to grow, and in recent borings it has been observed in Calcutta that at the depth of 481 feet, no rock bottom or marine bed was found; and at Lucknow even below

1336 feet, that is, 1000 feet below the sea-level, only coarse sand was seen at the end of the hole. In the Bay of Bengal there is a deep hollow known as *scratch of no ground* where water is more than 300 fathoms deep, while this great depression of the Gangetic and Indus basins are due to the stupendous upheaval of the Himalayan mountain system, and for a long time a deep and past chasm existed between the Himalayas and the peninsula and it has been filled up by the silt deposits brought by the Indus and the Ganges, and the partition of these two river systems in different direction is of but recent geologic event. The depression of the lower gangetic basin is entirely due to a different cause and owes its origin to the lifting of the Rajmahal and Assam Hills.

The Ganges springs forth from a snow-fed glacier at the elevation of about 10,400 feet at Gongotri. During its course to Hardwar, which is about 200 miles, this rapid *Jahnavi* and splashing mountain stream is called *Bhagirathi* and joining with *Allakananda* makes a heavy descent, for Hardwar is only a few feet above the sea-level. For the rest of nearly 1340 miles, the Ganges is a broad turbid river, flowing in easy gradient, and the fall is not more than 8 feet for a hundred miles, carrying its precious burden, distributing its fertilising replenishing silt and in the Delta, being not more able to carry it further lacking sufficient gradient, deposits it in the lower Bengal and has created and is creating land out of the ocean beds. The average fall from Allahabad to Benares is 6 inches per mile ; from Benares to Calcutta between 4 and 5 inches ; from Calcutta to the sea 1 to 2 inches. Eastern Bengal, the most fertile and luxurious soil in

India is but its recent product, in conjunction with the Brahmaputra, which arising in the Northern Himalayas passes more than half its course, and then making a sudden magnificent curve enters into Assam and Eastern Bengal. Where these two great rivers unite near Goalund and in its course to the sea, known as the *Megna*, the process of land-formation can yet be seen with graphic interest. In the rainy season when the molten snow swells these rivers by the summer heat and the rain adds to their volume, the whole Eastern Bengal is a vast expanse of water, only the human habitations here and there lift up their heads barely above the water level, just like tiny islands, surrounded by waving, slender and graceful palms, cocoanuts, mango trees and bannanas and all communications and intercourse are made through the water-channel. During winter the land is intersected by numerous rivers, rivulets, islands, marshes, shoals and sand banks. And in some rainy seasons when the heavily moist-laden current striking against the Arkanas and Assam Hills causes a great precipitation and in this cyclonic period if it happens that the storm wave coincides with the rising tide then the whole low coast land may be inundated with 10, 20, nay even thirty feet of tidal water, which is not unusual, as it occurred in 1876 when more than 100,000 people were drowned in the district of Backergunge alone.

Only there is another part of India which resembles Eastern Bengal in its water communication and aquatic charm and super-abundance of food supply, that is the Jhellum (*Chandra-Bhagà*) basin in the Cashmere valley. This was a lake, fringed by mountain chains and as soon as the Jhellum broke one of them near Baramula by

swirling down through rifts and clefts and entered into the plains, which drained the mountain-hollow, thus exposing the alluvial lake deposits, lands began to form. Near Srinagar the land-formation can still be seen.

The Indus more or less retains its mountain characteristic. Arising in the *Kailash* Himalayan glaciers, (14500) it crosses the entire Cashmere, almost dividing it into half and even when it enters the plains, leaving the mountain gorges at Attock, it is still for a long distance not far from the hilly back-ground. The silt of the Indus has been an important factor in filling up the ancient Rajputana sea. In the Runn of Cutch, the land formation can still be seen. The Indus is about 1800 miles in length and the gradient of the river bed is not so easy like the Ganges. But in the delta the fall hardly exceeds 3 inches per mile and due to the deposit of the silt, the level of the river bed is being constantly elevated and in many localities, it is above the land surface. Even within the historic time the Indus has changed the course of her channel when the main stream bursts its way through the lime stone ridges at Sukkur. This displacement has marked the disappearance of many populous centres which were dependent on its water supply. There is nothing astonishing in it. The Indus carries sufficient detritus and raises the level of its head, and it is 70 feet above the plains of Sind frontier, some 50 miles to the west of it, thus exposing the surrounding districts to dangerous floods whenever the waters can break through the banks, as with the Damoder in Northern Bengal, and where near the mouth, the change of channels and shifting of sandy shoals are frequent as in the Megna.



Other rivers have forced their way across the peninsula from the Western Ghats, Vindhya ranges or the Nilgiri Hills, into the ocean simply following the path of least resistance, of which the Mahanadi, the Godavari and the Krishna are the most important and they are comparatively speaking all ancient rivers, belonging to the old Gondavan continental system.

The geological age of the different rock systems of the Indian peninsula can be thus expressed in the equivalence of the European terminology.

*Unfossiliferous Archean, and Algonkian group* :—It extends over more than half of the peninsula and is the foundation bed of the old Gondavan continent, on which other sedimentary deposits have been laid down. The oldest of them are perhaps the Schistose gneisses, which are often found impregnated with pegmatites in the mica-mining districts; eruptive gneisses and granites as charnockites and norites of Southern India and anorthosites of Bengal. Next in order come the Gwaliors, Bijawars, Penganga, Cuddapaths, Vindhas, Kurnools, Kaladgis, Pakhabs and Bhimas. They are generally foliated and folded and are crystalline plutonic rocks.

*Cambrian marine formations* :—Salt range. In the Salt range are found the Trilobites which have a very close resemblance to *Olenellus* and they are but slight variations of the same species seen in the Lower Cambrian of the European formation, indicating the sea connection of India with Europe and that Mediterranean is but a shrunken relic of the past.

*Silurian* :—In Central Himalayas and Upper Burma.

*Devonian* :—Chitral and Maymyo limestones.

*Carboniferous* :—*Fenestella* shales of Central

Himalayas ; Zewan beds of Cashmere ; limestones in Burma.

*Permian* :—Boulder bed of Salt Range.

*Triassic marine formations* :—Productus shales and limestones of Central Himalayas and Salt Range ; Triyas of Central Himalayas and Ceratite formations of Salt Range ; Katrol, Chari and Patcham series of Cutch ; Spiti shales and massive limestone of Beluchistan. Fresh water formations, corresponding to the same geologic age ; Talcher boulder bed, Damodaer, Panchet, Rajmahal and Jubbolpur series.

*Cretaceous* :—Bagh, Arialpur, Trichinopoli, Utatpur and Cardita Baumonti beds. Fresh water formations are Deccan trap and Lameta series.

*Tertiary marine formations* :—Kirthar, Ranikot, Sabathu, Nari, Gaj, Yenangyaung, Prome and Makran series. Fresh water : Kasauli, Lower Manchar, Upper Siwaliks and Irrawadi series.

*Recent* :—Cuddalore sandstones and Coral banks. Fresh water : Older alluvium of Norbada and Godavari ; Porbondar stone, Rajputana desert and recent alluvium.

It does not follow that the Indian rocks are simple and homogeneous in their formation and structure. For the lava-flows, fresh sedimentary deposits, successive elevations, depressions, denudation, foliation and inclusion of lava-flows have changed the surface for the major part even of the Archean rocks of igneous origin. It is easily illustrated by the presence of shales, sandstones, limestones and basic lava which are found mixed up in the conglomerates of the mica-bearing pegmatites which are found in the Nellore and Hazaribag districts. In the Dharwar rocks quartzites are predominant, consisting of

micaceous rich and valuable iron-ores mixed occasionally with crystals of magnetite or hematite. The chloritic and talcose schists are found mixed with in places with finer grades of steatite, which unquestionably owes its origin to the volcanic action and water. The Cuddapath sediments which are nearly 20,000 feet in thickness in Southern India, deposited on the denuded and highly folded surface of the Archean system cover a large area of the peninsula, and as they are all unfossiliferous, it is very hard to ascertain their exact age and relative position. Even in the Vindyan system, which chiefly consists of shales and limestones, which are well suited to preserve the structure of organic life, no distinct fossil impression has yet been found. In the Salt range which has not only preserved best the fossils even of the Cambrian age, as is evident in the *Neubolus* series which is nearly 150 feet thick, but also the ripple marks of the ocean which surged on its shore and the retreating and the evaporation of whose waters caused the salt deposits, we find the curious phenomenon of the appearance of rock salt, gypsum and shales of the formation of the tertiary period lying below the salt marl of the Cambrian age in the Kohat area. This may be easily explained on the theory of plutonic disturbance and the folding and the contortion of the respective beds; but it gives a clear indication of the fundamental complex of the Indian geology.

Ceylon is the integral part of India and it was but recently separated from the peninsula and is still linked together by Rameswaram and Mannar islands and the submarine banks and rocks that connect them, known as *Rama's bridge*, where water is hardly a few feet deep

and navigation is not possible except at two points and for only small and shallow vessels. The mountain-chain of the Western Ghat which is depressed at Páli Ghat, after its highest ascent in the Nilgiri Hills, just as a fold, allowing the passage of the only river Ponnani, on this side, rises up again as an undulatory wave and crosses through Travancore as Cardamon Hills and is submerged in the process of separation of Ceylon from India and makes its highest ascent again in the Central part of the Island as Pidurutalaga (8,300 feet) overlooking the sacred peak, where lies the legendary foot-print of Goutama, the Buddha. Mahintala and Siguri chains have a special affinity in their formation and constitution with the Deccan Hills. The northern part seems to be a recent formation out of the detritus washed from the Coromandel coast, and covered with magnificent primeval forest.

Ceylon is a seductive island, full of beautiful mountains, forests, cataracts, water-falls, glens and valleys, unrivalled anywhere for its serene scenic charms, as well as fertility of the soil. It is nature's true play-ground. And it has wonderful harbors. Trincomali is world famous for its harboring facilities and the imposing grandeur and beauty of the outlook.

The Himalayan system is the backbone of the Central Asiatic continent. It is the chief reservoir of water supply for India and China. Next to the Polar region, there is nowhere to be found such an extensive ice and snow fields as in the South-eastern Trans-himalays, which exceeds fifty to seventy feet in depth. The Tibetan table-land, the "roof of the world", a vast territory extending over thousands of square miles and generally above 10,000 feet of altitude, is on its north eastern flank ;

on the north western are the Hindukush and Sulaiman ranges thus girdling India from the external world, except through narrow passes, as Skipi and Almora groups, Gomal, Tochi, Kurram and the Khyber passes, especially the latter, through which the successive waves of conquering hordes have reached the fertile Indian plains. The Himalaya protects India not only in various ways, but also replenishes the soil of the peninsula that lies at her feet, almost as if in a reverential attitude for the numerous blessings that she bestows on her. But for the Himalaya the climate of India would have been much colder as the lofty mountain chain prevents the arctic cold wave to enter into the plains; for the cold current can not make an ascent of more than 15,000 feet, which would be necessary to trespass the mighty mountain barrier. Nor are the moisture-laden precious clouds allowed to traverse her region without depositing the valuable burdens and squander the treasures in foreign lands. All the three principal river systems with their tributaries, Indus, Ganges and Bhramaputra originate in the trans-himalayan glaciers.

The Himalaya also enjoys not only the varied charms of her magnificent mountain scenery, but also the different climates, flora and fauna of arctic and alpine to temperate Zones, according to her altitude. Her valleys are well noted for fertility, wealth and beauty, especially Cashmere Kulu, Nepal and Sikhim.

Kashmere is dominated by gigantic mountain systems. Hindukush and Karakoram Ranges and some of the most imposing and loftiest glittering peaks of the world, Nanga Parbat (26,629), Rakaposhi (25,5610), Dapsang (282730), and the graceful Golden Throne (23,600); yet they are

but the wrinkles of the high Tibetan hinter-land, and the deeply eroded Indus that in a magnificent curve, almost intersects the territory, draining the snow-fed glacial floods of the North-western Himalayas, as does the Bhramaputra in the North-eastern section, making a deep trough, in the shape of a rainbow, is hardly more than a scratch on the surface. Kashmere enjoys the climate of Europe, according to the elevation of the ground. Jhellum valley is world-famous for the unique combination of water and mountains and the extraordinary fertility of the alluvial soil, especially in the Srinagar district.

Nepal is another very beautiful valley, elongated in shape, situated between the trans and sub-Himalayas. Unfortunately it is not so well known as the Cashmere valley, for it is not only separated from the plains by the mountain chains, but also by no less formidable Terai, formed by the accumulation of water in the depressed area at the bottom of the hills, giving a luxuriant growth to an wild, intractable, dense marshy forest and an extremely unsalubrious malarial zone. However once in the valley, the climate is very invigorating and delightful and the scenic beauty is varied and absorbing in interest. There are the most gorgeous and graceful peaks in the world that invite attention and admiration, as Nanda Devi (25,661), Gurla Peak (25,200), Daulagiri (Dhabalagiri 26,826), Gosai Than 26,305), Gourishankar (29,002) and Kanchanjinga (28,156).

Oudh has an agreeable climate ; it is neither too hot and dry in summer, nor too cold in winter ; it is pleasant all the year round. The soil is alluvial and fruitful and bears the flora of the temperate climate. Valmiki says of the land in his celebrated Ramayana : "There is

a smiling country, abundant in riches of all kinds, in grain and in cattle, situated on the bank of the Saraju and is named *Kosala*. There was a city celebrated throughout universe, founded by Manu, the chief of mankind. This was named *Ajodhya*."

Punjab was not *Panchanada* long ago, as described in the Vedic songs. It was really *Saptasindhava*, a second land, watered by seven exquisite rivers, the Indus, Sutlej, Jhellum, Chenub, Ravi, Beas and the Saraswati and the last one has at present disappeared in the sandy wastes. The tradition relates that Saraswati having discontinued to join the Indus, made an underground connection with the Ganges and the Jamuna near Prayag. Over an extensive area now in semi-arid condition, there are traces of ancient river beds and in the deltaic depression can still be seen the old channels, which once brought the life-giving waters, bringing productivity and wealth to the teeming population that lived on the soil, but which is now a more barren sandy desert where a few wild asses can only graze. The variation of temperature in the Punjab is also extreme, perhaps to the denudation of the trees, exceeding more than fifty degrees. In the summer, the wind seems to escape from the mouth of the fiery furnace, and in the winter water freezes. However the soil is productive, where water is procurable through the development of irrigation.

Deccan is virtually a ragged and rugged lava plateau covered with sheets of lava roughly 150,000 square miles to the depth of nearly 6,500 feet and would have been entirely barren but for the copious rain and the tropical sunshine which have partly decomposed the superstratum and out of the detritus, a fine marl has been deposited in

the valley which is highly productive and grows an exuberant vegetation. There are only two rivers, the Tapti and the Narmada which have forced their way across the Ghats, and both rise in the Central massive of the *Vindhyachal*. At the source of the Narmada at Amarakantak (3,493) three streamlets originate, going in three directions, the Seonath, a tributary of the Mahanadi, and the son of the Ganges. And of these the Narmada is the most beautiful, a gurgling stream, breaking here and there into the most magnificent cascades and then running for a while like a serene, rippling and dreamful lake, girdled by mountains and when rushing through the Jubblepur gorge, it becomes again a broad sheet of water reflecting the surrounding marbles, and having a very charming vista especially at the moon-lit night.

Southern India has a very delightful landscape. The soft enchanting beauty of the Nilgiris is well known. But the coast line of Travancore is also a magic panorama. Where the sea has ingressed into the hills and has formed sheltered estuaries, fords, armlets, natural harbors and lagoons and the sparkling mountain cascades fall directly into the sea and their splashing waters in the glorious sunshine create rainbows of myriad hues, and while from the fringe of the hills the graceful palms wave their greetings, near the waterline under the shelter of the branching trees, the gorgeous butterflies saunter about in warm scent-laden air and from the flowery bowers birds pour forth their melodious songs of visionary paradise.

Kalingapatan is the only harbor on the Eastern Ghats. And the Krishna is more than a geographical boundary of the Dravida, for the river has never been crossed by any external aggressor.



The Mahanadi and the Baitarini bring the volcanic lava crystals from the Deccan and depositing them at the mouth in the sea, have built the Chilka lake with the alluvial sediments. Inundations are very frequent at the mouth of these rivers, as well as of the Godabari and the Krishna which are magnificent rivers, for the level of the soil is low and when the tidal wave coincides with the swollen river of the rainy season, it is unusually destructive.

Central India is the kernel of the ancient Gondwana. Its denuded surface, though shorn much of its primitive grandeur and beauty, has still its charm and attraction. The climate is bracing, but the soil is poor, hilly and woody.

Eastern Bengal is the luxuriant, steamy, hot-house garden of India, watered by numerous sumptuous rivers, and the soil is perpetually renewed by the deposits of their heavily laden silt-bearing turbid water. There is as much water as land and she seems to belong more to the sea than to the peninsula and it is annually contested by water for supremacy.

There are six marked and regular seasons in India, but three are more pronounced—rainy season from May to October, winter from November to February, summer from March to June. In the Monsoon, the thirsty, parched and scorched soil drinks the long-expected and beneficent rain with ardour. In a few days the feverish earth is quite transformed and puts on a fresh smiling countenance. In the Deccan one sees the effect of the rain apparently. Due to the high mountain barriers, rain is not equally distributed. Where rain falls, there grows a superabundant, indomitable vegetation. A few miles off where it is scanty, it is almost a dreary, burning waste.

However the Monsoon comes with a regularity and it

takes about three weeks to traverse the peninsula. Due to the presence of the colossal, towering, massive Himalayan range, the atmospheric equilibrium is disturbed in the Southern Asiatic hemisphere. Its temperature is considerably higher during the summer (about 10-15 degrees) and during the winter, decidedly cooler than in the regions in same latitude either in the Atlantic or in the Pacific. In the summer the upper layer of the air is overheated and it rises up. So the vapour-laden heavy sea-air advances to fill the vacuum and to establish the equilibrium. When the first sea-current from Bay of Bengal strikes at the Arakan Hills, it becomes deflected in its motion and at Cherrapunji, there is a virtual downpour of about 500 inches a year and which falls in torrents. That there is more rain in the hills than on the sea-coast, is due to the fact that some ascension of the atmospheric moisture is necessary to an upper cooler layer for its condensation into water. This condensation also accelerates the ascensional movement by liberating the potential energy and thereby helping to cross the mountain obstructions. Between showers there is often an interval, for the clouds need further ascension for precipitation and after repeated showers there is clearness of the sky and the sunshine, for the aqueous vapour becomes exhausted in the atmosphere. One monsoon current enters into the interior of India through the Gangetic depression and another from the Arabic sea direct through the Western Ghats. By the deflection of these currents due to the geographic and orographical formation of the peninsula, there is unequal distribution of rain. Thus on average, the Burmese coastal hilly districts receive annually nearly 152·94 inches of rain, while in the interior of Burma from 64·98 to 32·65 inches; Western Ghats 120; Brahmaputra Valley 92·36; Gangetic Delta 79·38; Eastern Sub-Himalayas 64·46; Eastern Ghats 52; Satpuras (east) 55·67; Satpuras (west) 34·32; Gangetic plain (east) 47·46; Gangetic plain (west) 30·89; Western

Sub-Himalayas 42·48; Central Indian Plateau 32·25; Deccan 29·68; Gujrat 27·64; North-western Indo-Gangetic region 10·24; Rajputna and Beluchistan 8·66.

The average mean temperature in the summer and the winter of the months of June and December in the following cities is as follows:—Agra in June 94·4 F. in December 62·5; Jaipur 91·8 : 63·4; Lahore 93·4 : 56·8; Peshawar 91·2 : 52·4; Madras 89·6 : 76·5; Bangalore 75·8 : 68·4; Bombay 83·6 : 77·2; Nagpur 88·4 : 67·8; Patna 88·2 : 62·9; Karachi 88·1 : 68·1; Trichinopoli 88·7 : 77·3; Calcutta 84·8 : 66·3; Chittagong 81·6 : 68·1; Sibsagar 82·8 : 67·4; Mandalaya 86·8 : 70·8; Rangoon 81·5 : 77·3; Srinagor 71·0 : 38·2; Darjeeling 60·7 : 42·7; Simla 67·7 : 44·3; Mount Abu 75·7 : 60·8; Leh 58·9 : 24·0.

From this it is evident, that an infinite variety, a small universe itself, a microcosm of all climates, is India. When the sun like the fiery furnace burns the plains of the Punjab, eternal spring enchants the dwellers of the Nilgiris, there is wintry climate in the upper Himalayas and desolate and polar ice-fields in high mountains. When it is the rainy season in Eastern Bengal and it pours like a deluge, it is azure blue sky in Rajputna. On one side the desert of Thar and on the other the indomitable luxuriant vegetation of the Gangetic and Brahmaputra basins. On one side the naked and barren mountain regions of Rajputana and Beluchistan, and on the other the valleys rich and fertile as Cashmere and Nepal and the glittering snow-capped peaks like Gourishankar and Davalagiri. It is a thousand countries united in one, and the climate and the landscape separated by thousands miles are found here within the reach of a day's railroad journey. Flora in the Himalayas resembles that of Europe varying from Italy to Scandinavia according to the altitude; Northern India like Persia and China; Southern India like central Africa, Eastern Bengal and Sunderbans like Malaysia.

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## II.

### ETHNIC ELEMENTS IN HINDI NATIONALITY.

Zoologically man belongs to the placental eutherian mammalian order,\* and among the mammals, he belongs to the family of primates. The primates comprise *five groups* :—the Marmosets (Hapalidae), the Cebidae, the Cercopithecidae, the Hominiidae and the anthropoid apes (Simiidae). Of these the first two can be easily dismissed from our consideration as they are confined to America and they are differentiated by the rest of the group by many striking characters. The other three osteologically, morphologically and philogenitically in their embryonic growth have fundamental organic affinity and resemblance with man. A five months old foetus of the gorilla can hardly be distinguished from that of man of the same age. The toes of a human baby have a great clinging power, a reminiscence of the simian ancestry and arboreal life. And a young negro by the globular formation of his skull, prominent cheek-bones, platyrrhinian (flat-nosed) face and prognathous jaws very closely resembles a gorilla or a chimpanzee. The lowest coccygeal vertebrae yet remain as a rudimentary tail. The only difference between man and

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\* For the young is nourished in the womb of the mother through the placenta and are born fully formed without needing the protection of a pouch, as is the case with the marsupial implantationals or *Metatherians* or completing their development in a hatched egg as is the case with the monotremata or *Prototherians*.

the anthropoids is the erect position and the voluminous mass of the brain, both of which can be easily explained as adaptive functional uses. Running, leaping and climbing acted as elastic shocks to the marked curvature of the vertebral column and thus favoured the standing position, which was needed as a support to hold the increasingly heavy weight of the skull and its cerebral contents. And the difference of the weight of the brain of man from that of a chimpanzee or a gorilla is much less than between that of a gorilla and a lemur, or between a Caucasian and an Australoid.

However this does not mean that man has descended from a gibbon, orang, chimpanzee or gorilla. Rather it is more probable that all of them have sprung from a near common ancestor now extinct and thus the connecting link has been lost. Moreover due to the Geologic transformations of the Earth, deep ocean waves might now roll over what was previously the land surface and where man originated.

Whether different races of man are of polygenetic or monogenetic origin, can not of course be positively ascertained. But their characteristic variations and differentiations are by no means greater than what are to be found among the animals and plants, belonging to the same genera and species. And all the marked traits that differentiate one race from the other can be easily accounted for by environmental influences. The intellectual vigour and acuteness, the moral sensibility and fineness should not be any racial criterion. For they are either due to the arrested development of the one through unfavourable and depressed circumstances or the excessive growth in the other in the opportune conditions of life. The real

marks of distinction as classified by anthropologists are principally, colour, hair, nose and the cranium.

*Colour* :—Colour is due to the deposit and accumulation of the pigment granules in the lower layers of the rete Malphigi, as a protective cushion against the harmful penetrating actinic rays of the sun. Anatomically it is not even 'skin-deep'. For when by an accident as a scald or a blister, the epidermis is removed in a negro and most of the pigment cells come away with it, the dermis has the appearance of a white man. How the pigment is formed and why the deposition of the coloring-matter in one individual is greater than the other, belonging to the same race, nay the same parents, living under the same climate conditions, are not yet thoroughly understood. Perhaps it is the combined and complex effect of heredity and metabolism. Never the two children, even the twins, inherit the same germ-plasms. The ancestral chain is so long, linking man to the unicellular protoplasmic speck and the ancestral inheritance is so rich and variegated that any characteristic might dominate due to atavism. And when the lungs and the liver are well developed and in high functional activity, the venous blood is thoroughly arterialized in passing through the pulmonic circulation, that is, the carbon it contains passes off as carbonic oxide into the air. Where the pulmonary function is sluggish, the liver acts the part of a compensatory organ; the secretion of the bile is increased but the carbon is not so well abstracted from the blood and passing into fine capillaries, lining the papillæ of the skin, is deposited on their surface as pigment granules.

*Hair* :—Hair is the only horny product of the skin of man, yet left. It is the nature's protective garment

against cold and bruises. But by the constant use and friction of clothes, he has been well-nigh denuded of his ancestral hairy coating and he has it still in sufficient quantity on the head, arm-pits and the pubic regions. Beards in the male have been only developed as sexual charms. But on the head the European peoples are showing a tendency to lose it by their excessive use of felt-hats. The human hair is chiefly of two kinds, wooly and smooth, with their various gradations. The difference in their morphological structure is that the smooth hair is circular in microscopical examination, while the wooly hair is elliptical. The dermis of the Negroes becomes excessively thickened and hardened due to the superabundant accumulation of pigments and the hair encounters such a resistance in its development that it can only shoot up like a sharp-edged sabre and piercing the surface it becomes twisted from the beginning into a spiral form as it emerges from the incurvated mould.

*Nose* :—The function of the nose is to smell and to breathe. The long-nosed skull is called *leptorhinian*, flat-nosed *platyrrhinian* and the intermediate *mesorhinian*. As breathing is essential to the oxidising process of life, in a warm, humid climate, naturally the nose has evolved out to the short and flat, for the air lacking sufficient ozone, plenty of it has to be taken in and it being warm and moist, it can not do any harm to the nasal mucous membrane; while in a desert or cold climate, the nose has necessarily to be narrow and long, for in a desert the dust particles are to be prevented from penetrating into the lungs and the dry air has to be gradually moistened and in a cold climate the air has

to be slowly warmed to the body temperature or it might easily cause congestive inflammation.

*Cranium* :—Cranium (skull) as a racial criterion has been the object of much study and speculation. But it is still elusive and obscure and the result is uncertain. Generally the skulls are classified as Dolichocephalic and Brachycephalic, according to the cephalic index which is generally stanardised by the ratio of the breadth of the cranium to its length, by hundredth measured usually from the glabella to the most prominent part of the occiput. All indices of 80 or above indicate *brachycephaly* and all of less than 80 *dolichocephaly*. Thus Germans, English, Celts, Romans, Greeks, Hindus, Persians, Arabs, Jews, Africans, Australians, Chinese, Tunguses, Eskimos, and some American tribes are dolichocephalic. And the Finns, Lapps, Hungarians, Turks, Slavs, Buskes, Etrurians, Samoieds, Circassians, Afghans, Tartars, Malayas, Mongolians, Polynesians, Papuas and some American tribes are brachycephalic. The absurdity of such a standard of racial measurement is manifest when one remembers that in a collection of 237 German skulls, the average transverse diameter was found 69 : 100, while 66 skulls from Africa presented the same average ratio, 69 : 100.

Then the question arises when and where man at first originated ? It is very difficult to answer the question with any definiteness. The anthropoid apes seem to have existed for at least 3 millions of years, as testified by the fossil remains. Man's antiquity is not so certain. In the explorations of Nippur, the Sumerian civilisation has been estimated by Dr. Hilprecht to be more than nine thousand years old. Mr. Finders Petrie found at Gerzeh near Meydum "a prehistoric cemetery with the earliest known,



of about 6000-7000 B. C., apparently a chance lot of native iron worked up."\* Again in "the numerous borings made in the alluvium of the Nile valley to a depth of 60 ft., where down to the lowest level fragments of burnt brick and pottery were always found, showing that people advanced enough in the arts to bake brick and pottery have inhabited the valley during the long period required for the Nile inundations to deposit 60 ft. of mud at a rate probably not averaging more than a few inches a century."† Man's bones have been found mixed up with the fossil remains of mastadon and rhinoceros which are long extinct in the same geological strata. Ever since the discovery of the fossil human bones at Forbes Quarry, Gibraltar, at Neanderthal in Germany, Spy in Belgium, Somerset ancient river beds in England, keen public interest has been awakened. In the case of the *Homo heidelbergensis* all the molars except the third left have 5 cusps. The tendency in recent man is toward a 4-cusp type for the third molar, if indeed there be a third molar. The breaking away of the crowns of 4 teeth on the left side have tended to facilitate the study of the pulp cavities and the walls. This study reveals the fact that dentition of *Homo heidelbergensis* represents a youthful stage in the modern European. That is to say in the ontogeny of the latter, a stage representing adult dental characters when the race was young is now reached at the age of 9-14 years. The Galley Hill skeleton came from a depth of more than 8 ft. in Pleistocene high-level river drift and Mr. Keith estimates that it is not less than 170,000 years old, allowing "1000 years for every foot

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\* Records of the Past, Vol. 10, p. 315.

† E. B. Vol. III, p. 113.

which the river has worn away or laid down". The fossil found in 1911 in the ancient bed of the river Axe in Somerset, must be older, as it lacked the power of articulate speech and was perhaps contemporaneous of the time when the British Isles were still connected with the continent. In the Wildkirchli cavern.(Canton Appenzel, Switzerland ) Mousterian fossil has been found with two bone implements and bones of the cave lion, the cave panther, badger, marten (*Mustela martes*), ibex, chamois, stag, marmot, otter and hermit crow. As this cave must have been occupied before the Wurm glacial period, the mousterian epoch is atleast 150,000 years old. But as the Chellian industry is older and was of long duration and their remains are not only found in the lower Quarternary but also in the Miocene and even in the Oligocene as at Boncelles, Europe must have been certainly inhabited from much earlier times. The *Pithecanthropus Erectus* the name given to the species, supposed to be represented in portions of a skeleton, discovered by Dr. Dubois 1894 in central Java, is certainly much older. The specimens consisted of two teeth, found at different times a few yards from each other, the top part of a skull found about a yard from one of the teeth and a femur about 15 yards distant and they were all lying in a volcanic tufa on the bank of the Bengawan, near Trinil. The cranium has only the capacity of 850 cc. but the femur is long and straight and is entirely human though the tooth resembles that of a gorilla. Dr. Dubois and quite a few naturalists regarded this as the connecting link between man and anthropoid apes and they claimed that these bones had been found in the Tertiary bed. But these assertions have been questioned. Earnest Hæckel thinks that man

originated in Lumaria and migrated from that place to the rest of the world.

The question then arises, why and what made this people migrate ? This is no solitary exception. All races have migrated, as all animals and plants. We do not find anything in the tradition of a single race, that does not indicate that the new-comer did not come from a distant land and found the country already occupied and the natives not conquered and subjugated. There have been successive waves of invasion and every race and nationality has been slowly built up on this diversified strata with the coming and fusion of different bloods. And the motive is not far to seek. The primitive man had no fixed abode. He lived on tree-tops or in caves. The domestication of animal has not yet begun ; of course, agriculture out of question. Living as he did, on berries, roots, fruits and worms and as he advanced in intelligence, out of hunting small animals with the branches of trees and stones, the food-supply in a certain territory becomes quickly exhausted and in quest of food, he has to push forward. He may be driven by others who are in the same pursuit or the whole tribes may have to migrate to great distances before advancing and retiring glaciers and in the post-glacial periods, the consequent frequent floods. The accumulation of thousands of feet of ice and snow was not alone confined to the northern hemisphere. The testimony of ice-action is even scattered over southern India and Australia. Mr. T. H. Holland of the Indian Geological survey writes :—"At different parts of this great southern continent (India) there occur peculiar boulder-beds whose special characters appear to be best explained as the result of ice-action. The boulders of this peculiar formation

of Talcher series vary from mere pebbles to blocks, weighing many tons, generally well rounded and rarely scratched, lying often in a matrix of fine silt, a matrix which could not exist if the boulders had reached their present position by rolling in rapid streams. The formation in New South Wales which is taken to be the equivalent of the Talcher boulder-bed has a similar structure, with large and sometimes striated boulders embedded in a fine silty matrix ; and in this case the tranquil conditions under which the formation was laid down are shown by the inclusion of numerous delicate *Fanestellæ* and undisturbed bivalves lying in the silt.”\*

What caused this great ice-age or glacial period or periods when ice and snow accumulated to a depth of more than a mile over nearly half the surface of the earth at one time or the other ? Various theories have been formulated, but they do not explain all the phenomena and they are more or less unsatisfactory. The principals of them are :—(1) Elevation of the Arctic region, thus extending the ice-sheets to North-west Europe and North-east America. (2) Atmospheric changes, resulting in the reduction of the Carbon Dioxide, a thermal absorbent, and by the appearance of new lands, oceanic currents were interrupted and consequently the moisture in the air was depleted, and as both moisture and Carbon Dioxide act as a thermal blanketing for the earth, the extending of the polar ice-fields was the natural resultant of their impoverishment. (3) The shifting of the axis of the earth. The famous astronomer Arrhenius writes :—“The poles of the axis of the Earth appear to move in a very irregular

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\* Imperial Gazetteer of India, Vol. I. p. 81.

curve about their mean axis. The movement is exceedingly small. The deviation of the North Pole from its mean position does not amount to more than 10 m (about 31 ft). It has been believed that these motions of the North Pole are subject to sudden fluctuations after unusually violent earth-quakes, especially when such concussions follow at rapid intervals.”\* (4) Croll’s theory of the eccentricity of the orbit of the earth. According to him the glacial epoch or the world winter is coincident with the time when the earth is in aphelion at the winter solstice and the orbit has attained its greatest transverse elongation which the earth has done during the last million years at the following periods:—950,000 B. C.,; the next with 850,000 B. C.,; the third with 750,000 B. C.,; the fourth reaches forward a little from the century mark thus far maintained to about 600,000 B. C.,; the next epoch is about 500,000 B. C. The fifth lies between 350,000 to 300,000 B. C. The sixth corresponds with the year 210,000 B. C. The seventh falls approximately to 100,000 B. C. After the earth’s orbit has reached its greatest transverse elongation, the epoch of moderation begins to ensue. The major axis of the orbit begins to contract and the minor to expand and the aphelion to depart from the winter solstice and as a consequence the sun with each cycle occupies a more favourable and favouring position with respect to the ice-cap which covers the northern hemisphere. Gradually and with long lapses of time, the lower parts, that is the southern parts, or the spurs of the ice-mountain begin to melt away and with the increasing sun’s heat, the

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\* Svante Arrhenius—*Worlds in the making*, p. 28.

ever-swelling glacial rivers are formed, changing landscape, depositing glacial silts and debris, and making valleys, lakes and river-beds.

The first immigrants came to India from Lemuria or by whatever name it may be called—the land that connected eastern and southern India with Africa on one side and with Australia on the other. They are known as the Kols, Bhils, Pariahs and Veddas, all belonging to the Kolarian family, having close racial affinity with the Australoid race that spread over Australasia, Malacca, Siam, Further India and spoke the Mon-Khmer languages. In the Puranas they were called *Nishadas* and ‘described of the complexion of the charcoal, with flattened feature and dwarfish stature.’\* Of course it goes without saying that there were various tribes of them and perhaps they came in successive waves of invasion. This we find in the composition of the Siamese race which has been formed out of the gradual fusion of the Lao-Tai group with the tribes of the Mon-khmer family and the consequent evolution of *Sukhothai* (sukho=happiness+thai=free) a corruption of *Sukhodaya* ‘the dawn of happiness.’ The component elements of *Sukhothai*, a term introduced into the country by the Tamil colonisers or Siamese race, are the following :—

*Negrito* :—Semang.

*Mon-Annam* :—Khmer ; Mon ; Yuan (Annamese) ; Lawa ; Kache ; Chong ; Malays.

*Tibeto Burman* :—Meao, Meo or Mean-tsu ; Muh-so or Lahu ; Kawi ; Aka or Kaw ; Lishaw ; Yao or Yao-yin.

*The Lao-Tai* :—Lao ; Ngio (Shan) ; Lu ; Sam-sam.

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\* Vishnu Purana, Vol. I, p. 13.

*Other Tribes* :—Karien or Karen ; Sakai. And fusion of a little Dravidian blood in the upper classes from the Tamil colonisers.

Then came the Dravidians and wrested the possession of the land from the Kōlarians. Perhaps they intermarried with the chieftains and drove the rest of the aborigines to the mountain fastness, woody tracts and unfertile regions. It goes without saying that many were taken as slaves and the blood mingled more or less, consciously or unconsciously as it always happens under similar circumstances. As soon as the Kōlarians were reconciled to their new destiny or were unable to offer any effective resistance to their new masters, the Dravidians became settled in the peaceful pursuits of agriculture and trade. They organised industrious and well developed states and kingdoms. Aitraya Brahmana mentions (VII. 18). "Andras, Pundas, Sabarus, Pulindus and Mutibus". This clearly indicates that though the Aryan conquerors have been in the northern part of India for many centuries, if not longer, they have not yet been able to develop a state, as no such geographical designation is found in any of their contemporaneous literature ; while the Dravidians, though terribly vanquished by the new Aryan invaders, and those who survived compelled to leave their soil and retire behind the rampart of the Vindya Range and suffered thus an irreparable disaster, yet their kingdoms in the south were still unshattered, powerful and capable of offering resistance and resisted bravely every encroachment on their rights.

Who are these wonderful people—the Dravidians ? Here opinions vary. But the recent explorations in

Chaldea, Babylonia and Persia, the archeological researches and the decipherment of the ancient tablets and records are showing an unmistakable way and are solving the problems that baffled the scholars before.

The Dravidians belonged to that dark Accadian race who developed such an early and marvellous civilisation in Chaldea and lower Babylonia. Perhaps they were forced to migrate by the Semitic incursions and conquests or pushed forward to new lands as an urge of racial expansion. However they were wide-spread. Not only the Aryans had to fight with them for the possession of the coveted land in desperate sanguinary wars, lasting for centuries in India, but the same thing had been gone through in Media and Iran as the reading of the Zend-Avesta clearly indicates, and the Dravidians were simply called by their generic name the *Turan*. In Beluchistan, there is still the remnant of the same race, known as Braui and there is now a little Iranian and Semitic infusion of blood in them, and they speak yet the agglutinative Dravidian tongue.

And there was hardly any insurmountable difficulty to emigrate from Chaldea and Iran to India in large number as it presents to-day. The Mesopotamian (between the rivers) civilisation developed in the post-glacial period in that vast and inexhaustively fertile lower basin, immensely enriched by the deposit of the alluvium brought by the swollen rivers from the melting glaciers. The great system of irrigation for which the land was far-famed, was only developed when the civilisation was far advanced and the abundant water-supply from the molten ice-fields was being rapidly diminished and they can be still traced throughout an extensive territory,



once, the most productive and prosperous region of the world, but now barren and desolate by the destruction of that splendid system of canalization through ruthlessness and savagery of war and negligence of man, and where millions lived in plenty, there hardly a few nomadic Arabs now barely eke out a miserable existence. But by the time the Dravidians traversed the region now arid and forbidding, it was well-watered by numerous streams and lakes out of glacial reservoir in the mountains which were still covered in the higher range at least with an icy mantle. And moreover there were possibly numerous marshes full of rich pasturage for the cattle. It should not be forgotten that what is now Shahara, Arabian, Persian, Thor (Rajputna desert) and Gobi deserts, was one day one large continuous ocean and the Mediterranean, Black Sea, Azov and now the land-locked salt lakes, Caspian, Aral, L. Van, L. Urumiya (in Armenia) and the Dead Sea are but the shrunk relic of their past. Possibly their waters were emptied by the stupendous elevation of the Himalayan system, the back-bone of Asia. But there were enough depressions left filled with water, whose evaporation would have laden the air with aquatic vapour and caused precipitation of rain. Even in historic times, Turkestan was not so arid as is evidenced by the travels of the Chinese pilgrims to India and Khotan Daria once so flourishing and prosperous Buddhist country is now entirely covered with desert sand. In Persia one sees the vivid testimony of the same fact all around. From the main roads one can not fail to observe the terraced mountain slopes, once cultivated with industrious and ingenuous system of irrigation, as one sees even to-day in Cashmere and

Afganistan, now entirely dreary waste, and the waterless forsaken wells and empty walls of deserted and ruined houses standing as a ghostly mockery to tired and thirsty travellers. Alexander even found large trees enough on the Indus to build a great fleet to carry his large army and equipment to Babylonia.

The Akkadians though generally of peaceful habits, were not however cowardly. They fought bravely everywhere, in Akkad, Sumeria, Elam, Media, Iran and Gondwana (Pre-Aryan India). The Babylonian records, the Zend-Avesta, the Iranian traditions and the Vedas bear eloquent testimony to their valour, industry and integrity of character. When Akkad lost her freedom by the onrush of the Semitic hordes, Sumeria fought a hopeless war for more than a decade and Elam was only conquered by Sargon in 3800 B. C. Yet she did not hopelessly submit. She revolted and recovered her independence and in the year 2280 B. C. the Elamite king Kutur-Nakhkhunte was on the aggressive and carried away from Erech the image of the goddess Nanā. However though she was soon subdued after stubborn resistance, she was never reconciled to her fate and she was always an active ferment and fomented conspiracy and rebellion against the Assyrian suzerainty, and in which the priests always took the leading part, until about 640 B. C. when in rage Ashur-Bani-Pal (668-626 B. C.) almost exterminated the entire Elamite army on the banks of the river Tite, utterly devastated the land and reduced the whole country to a desert, plundered and razed Susa to the ground, desecrated the royal sepulchres and carried away the images of the gods and of 32 kings "in silver, gold, bronze and alabaster." This brought about the

disintegration and downfall of the mighty Assyrian empire and though the old lion still roared for a couple of hundred years longer, his nerve-centre was vitally wounded, his paws lost their deadly power and he was simply lying prostrate to be the object of prey of young rising powers.

The splendid civilisation of Babylonia was due to this Turanian people. The Semitic element was simply rapacious, blood-thirsty, fanatical, greedy and sensual, as it has always been. The Semites have never been constructive, but always destructive. They flayed alive the skins, pulled out the eyes, cut the tongue of the prisoners, made the kings draw the chariots as an amusement and cut their limbs and gave them to dogs as food. One can not read their part of history without a shudder in the soul. The Semitic Assyria hardly contributed anything worth remembering to the great Babylonian culture. On the other hand they only applied fire and sword whenever they could, as Sennaccherib enraged at the revolt of the populace, razed the holy city of Babylon to the ground in 691 B. C. and 'threw the rubbish into the Arakhtu ( the southern canal ) and never the city to rise again to disturb his tranquility' as he boastfully expressed it. But the metropolis of the western Asia rose again under her own king Nebuchadnezzar, and never was the imperial city so splendid and magnificent and the wonder of the ancient world. The secret of this quick resuscitation lies in the fact that Babylonia proper (Akkad, Sumer and Elam) was chiefly inhabited by the Turanian people, who were thrifty, frugal, industrial and intelligent and though often acknowledged the Assyrian suzerainty, in their internal affairs they had never lost their

autonomy and they had their own Patesi ( priest-king ) and chiefs and the most powerful priestly class that dominated the policy and destiny of the Assyro-Babylonian empire and they were Turanian by birth and their sentiments were invariably with their own populace. But for the connivance of these priests, Cyrus could never enter into Babylon.

But even politically and militarily Semitic Assyria has not always dominated Babylonia in the splendid period of her history. The Kassites belonging to the Turanian race ruled Babylon for 576 years 9 months from 1780 B. C.

Of course the Turanian was a large family having many branches. The Mongolian group (Chinese, Japanese, Koreans) is ascribed by some to belong to the same family, as they speak the agglutinative language. But their racial characteristic is yellow-brown skin, black and straight hair, short stature, delicate constitution, high cheek-bone, flat noses, scantiness of hair on the body and the face and particularly oblique eyes. The oblique eyes as a special mark of the race is noticed even in the hieroglyphics of the Shang dynasty (second millennium B. C. ). While the Akkadians and Sumerians as seen in the statuary and stelles of Babylonia as well as found in Memphis\* were of dark-brown complexion (chocolate colour), short stature, but of sturdy frame, oval face, stout nose, straight hair, full head ; they typically resembled the Dravidians, not only in cranium, but almost in all the details. In addition to that when it is remembered that both the Sumerians and the Dravidians had the same mythological back-ground, had the same system of reckoning numbers, weeks, months

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\* Sumerian heads, Records of the Past Vol. VIII. P. 130-135.

and the division of year and day and astrological calculations, worshipped almost identical gods, serpents and phallic symbols, kept alike temple-girls, had the same style of temple architecture as is manifest when one compares the Zikkurat and the Gopuram, and were accustomed to addressing the sister's children as *sons* and *daughters* and own brother's children as *nephew* which still survives among the Nairs in southern India; one can not avoid the conclusion that the Dravidians and the Sumerians had a very close racial affinity if they did not actually belong to the same stock.

Then came Aryas in successive waves of invasion. The earliest clans that settled in the Indus valley, watered by seven streams, driving out the Dravidians beyond the Vindays and possibly enslaving those who submitted, belonged perhaps to the pure *shukla* Aryan stock, if that expression is permissible in a racial designation. They arrived in India by the Oxus Kabul (cophen) river route, making junction now at Attock. At first they perhaps thought that the broad and expansive river was an estuary of the sea and called it *Shindu* and by that name to the Aryan new-comers the country was known and the Iranians lacking sibilant in their tongue, called it simply *Hindu* and in Greek it was converted into *Indos* as the Greeks had no aspirate *H* in their language. The principal tribes concerned in this armed immigration, were Atharvans, Agnirashas, Bhrigus, Jamadagnis, Atris, Vashisthas, Bharadvajas, Goutamas, Kasyapas, Agathas, Angiras, and Kanvas.

The Rig-veda mentions five races, *pancha manushya* (VIII. 9. 2), *pancha jana* (III. 37. 9; III. 59. 8; VI. 11. 4; VIII. 32. 22; IX. 65. 23), *pancha krshtaya* (III. 2. 10;

III. 53. 16) *pancha kshitayah* (I. VII. 9 ; V. 35. 2 ; VI. 46. 7 ; VII. 75. 4.) *pancha carshanah* (V. 86. 2 ; VII. 15. 2 ; XI. 101. 9).

Turvasa Yadu appear together I. 36. 18 ; IV. 30. 17 ; V. 31. 8 ; VI. 20. 12 ; VIII. 4. 7 ; IX. 61. 2 ; X. 49. 8. Anu appears I. 108. 8 ; VII. 18. 12 ; V. 31. 4. Druhyu appears in I. 108. 8 , VI. 46. 8 ; VII. 18. 6. Puru in I. 36. 1 ; IV. 21. 10 ; V. 17. 1 ; VI. 20. 10 ; VII. 5. 3 ; VIII. 50. 6 ; 10. 4. I. Yadava in VIII. I. 31. 6 ; I 48. 46.

Of these five races, Turvasa, Yadu, Anu, Druhyu and Puru, Purus attained the greatest power (X. 48. 5). Purus were later called Kurus as we find in Chandogyaupanishad VI. 17, where these two terms are used synonymously. Perhaps it originated from the great Puru emperor, Kurusravana (Trasadasyava). Or perhaps it was from the name of their kingdom Panchala, which was, according to Satyapatha Brahmana, known before as Krivi

Besides these five races, Nahusha people are also mentioned. Nahusha was a great king (vispati, I. 31. II). In the Mahabharata it is mentioned that he even overthrew Indra and took his place. That Nahusha people belonged to a different race is clear from their wish that their might should be equal to that of the five races (VII. 95. 2).

Panis were an avaricious commercial people and they did not perform the *soma* sacrifices (V. 34. 7) and they were without faith and religion (VI. 20. 4). Bribu, the merchant prince, rich in cattle and horses, however used to make generous contribution. But there used to be constant fight between the Panis and the five races (VIII. 53. 2 ; X. 60. 6).

Their decisive victory over the Dravidians lay in the fact that they came in the late bronze and early iron period, armed with the latest military equipment, with bronze helmet, sword and armour, iron-spear, especially with war-horses and chariots, with which the Dravidians were unfamiliar, and as they could not run as fast as the Arya cavalry and generally being peaceful agriculturalists and traders, they were easily overwhelmed by the nomadic horsemen, well-seasoned and trained in warfare and who delighted in fighting.

Civilisation has always succumbed to well-armed, swift and hardy roving riders, for they can easily destroy the complex and delicate frame-work of civilisation and if they are defeated they can easily retreat, without serious loss, to their mountain or desert fastness. However one might shroud with a romantic halo a warrior or a warrior nation, the fact is, a soldier, especially in an aggressive war of conquest, has necessarily to be a brute and a savage. None with a human heart or sensibility of the soul, can kill, murder, make orphans of innocent children, cast an irredeemable pathos of misery, desolation and destitution over happy homes, burn homesteads and reduce productive soil and smiling gardens into a barren waste—and this is the soldier's profession. War easily rubs off the thin cultural veneer of psychic progress and refinement and plunges the soul into the ancestral atavistic state of crudity and savagery, rousing all the wild passions, and under its hypnotic spell—for it recalls the primitive ancestral memory—often even an otherwise conscientious man loses his balance of mind and turns out a brute. May be, this is the painful process of progress. By the cohering power of brute force, the tribes are moulded into

a kingdom and a state and states into an empire and by the commanding influence it exerts, it standardises and spreads to the neighbouring countries, the culture it has been able to absorb and to create by its power, patronage, wealth, leisure and the natural uplifting force in man in taking a special pride in exceeding others in abilities. This has hitherto been the history of the world. Civilisation acts as a solvent and when it has sufficiently softened the crude fibres and turned them into a delicate refined texture, they might shine in brilliance for a while, but soon lose much of their primitive strength and resistance. As soon as the conquering race becomes civilised enough to regard militarism as an unworthy profession or loves ease, comforts and pleasures of settled life rather than the privation and hardship of the army camp, some other hardier people come and oust him and take his place.

Thus after the ferocious Semitic Assyrians conquered the Sumerians and became in contact with them a little humanised and civilized, as is exemplified in the time of Ashur-bani-pal (668-626 B. C.), a raid and an incursion of the Scythian horsemen shattered into pieces the mighty Assyrian, Egyptian and Median empires. And when out of these fragments the Iranians built up a powerful empire, which not only became the mistress of the western Asia, but challenged in turn the Hellenic states and the dreadful Roman legions for the then supremacy of the world, its might vanished, and its cultural influence practically disappeared, when swarms of nomadic Arabian horsemen fell upon the land, with sword in one hand and the Koran in the other, greed and rape in the soul and Allah on the tongue. Thus



when Greece built up a brilliant civilisation over the subjugation of the Pelasgian population, Roman barbarians came and conquered her, and Rome in its turn fell a prey to the Goths, Vandals and Huns.

But of these people, Aryas (Aryans) alone had the germ of progress in them and a wonderful aptitude of assimilating and learning things of intrinsic value and of fundamental importance. The Semites have hardly contributed anything worth to human knowledge. When the Assyrians won a vast and rich empire, they became pleasure-loving, and while they were revelling in their debaucheries and refined barbarities, it was the Babylonians who established famous temple schools of astronomy, sculpture, architecture and agricultural engineering. The Jewish history is one of continuous horrors of greed, rapine and incendiary, of torturing the prisoners for their amusement, as burying them into masonry, burning them in fire or flying out their skins while alive, and if they were not the first to inaugurate the system of slavery, out of their covetousness, they started slave-marts every where and they were behind every army to make the highest bid, thus to induce the conquering hordes to make as many slaves as possible. And in every court they intrigued, conspired and incited for war, for in war they had a good lucrative business. And their monotheistic god Yahveh, is none else but the patron deity of the Beni-Israel, the Babylonian thunder-god Adad and who was later identified with the phallic god Baal with all the wild sensual orgies\* of which the Old Testament is replete with illustrations.†

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\* See 'The Origin of Christianity and the Cross.'

† "The voice of the Lord (Yahveh) is upon the waters, the God

The Arabs had an extensive dominion in Asia, Europe and Africa, yet they did nothing to develop the lands and the resources or for art and sciences, as a permanent record of their power and prosperity, except to build mosques out of the materials of the most precious monuments of antiquity, which they stripped and tore down with ruthless vandalism and to translate and transmit priceless records of Hellenic and Roman culture, to Europe back again—her own glorious inheritance which she forgot, when she sank to the lowest depth of credulity, ignorance and superstition under the benumbing spell of a hallucinatory fanatical semitic religion-mythicism.\* The

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of glory thundereth, even the Lord upon many waters, the voice of the Lord is powerful, the voice of the Lord is full of majesty (might). The voice of the Lord breaketh the cedars ; Yea, the Lord breaketh in pieces the cedars of Lebanon. He maketh them also to skip like a calf ; Lebanon and Sirion like a young wild ox. The voice of the Lord cleaveth the flames of fire. The voice of the Lord shaketh wilderness, the Lord shaketh the wilderness of Kadesh. The voice of the Lord maketh the hinds to calve, and strippeth the forests bare." (Psalm 29. 3-9).

\* However the idea of translating foreign book did not start with the Arabs. The Gnostics who were eclectic in their religious faith and became very tolerant towards other creeds, began it, coming more or less under the Buddhist influence and Greek culture. The Arabs when they came into power, simply fostered and patronised it. Without question partly they assimilated the knowledge of which their language became the depository when like a baneful scourge, Christianity was withering the fountain spring of brilliant Greco-Roman intellectual activities. But they hardly added any worth-mentioning original contribution to it. The great Arab historian rightly says :—"We have shown how the chief centre of human knowledge was transferred from Athens to Alexandria in the country of Egypt. The Emperor Auguste after having had

Mongolian group of races (Chinese and the Japanese) is well known for its adaptability, industry and temperance. But in none of the races is there found such a combination of vivid imagination, of passionate ardour for an ideal, sensibility of the soul and practical common sense indeed

Cleopatra executed, established two seats of learning, Alexandria and Rome. The emperor Theodore abolished schools in Rome and brought them to Alexandria. We have said still why under Omar son of Abd-el-Aziz, the chief seat of teaching was transferred from Alexandria to Antioch and how later in the reign of Motewekhil, it was transferred to Haran." (*Kitab at-tanbih was Ischraf*, VIII.).

Edesse not far off from Haran was the strong seat of the Gnostics and there the *Peshito* Bible was translated into Syriac based on Septuagint version. At Jondisabour in the province of Khuzistan, the Persian King Khosroes Anochirvan about 530 A. D. founded the famous school of philosophy and medicine which lasted up to the time of Abbasides. Ibas translated the works of Diodore of Tarse and Theodore of Mopsueste and some diverse writings of Aristotle. Probus translated and commented on *Hermeneia* and *Organon*. Paul-le-Perse composed *An Introduction to Logic* and dedicated this admirable composition to the Persian king Khosroes Anochirwan. (*Journal Asiatique* p. 312).

When Edesse was hit by fire and sword by the fanaticism of the Christians as a pernicious seat of heresy and sophism, it could not damp her ardour and research for learning. Sergius-de-Rechaina (Arabic Rasain) translated some of the writings of *Galen*, *Categories* of Aristotle, *Isagoge* of neo-Platonist Porphyry, *Universe* and *Soul* attributed to Aristotle, from Greek into Syriac, which was then the current literary language of the southern Mediterranean. He also wrote some original works on *Logic*, *the cause of the Universe*, *Species*, *Space and the Individual*, and *Negation and affirmation*, which he dedicated to his patron, Theodore of Merv.

Thus the Arabs were slowly initiated into the glory of learning. But in the beginning they did not look upon Greece, but on Persia

as in the Aryan. The Mongolian race is very practical and has a marvellous gift for order and system, which is amply attested by her social ethics and organisation, which is resistant and at the same time flexible ; but their genius has not been creative. The Semites also dreamed, but it

and India as the true home of knowledge. In Heglra 156 (772 A.D.) a Hindu merchant came to Bagdad and presented to Caliph Abou Jaffar el-Mansour an Indian book of astronomy. It was translated by el-Fazari into Arabic known as *Sindhind* and became the starting point of Arabian school of astronomy. (M. Cantor : *Vorlesungen uber Geschichte der Mathematik*, Vol. I. p. 597 ; Masudi *Golden Meadows*, VIII. 291). The great astronomer Mohammed, son of Musa el-Kharizmi later in the reign of Mamun combined the Indian and the Greek systems, which was known as Arabic.

Masudi also mentions that *Panchatantra* was translated into Arabic *Kalilah et Dimnah* or *Fables of Bidpai* by Ibn el-Mokaffa, a well-known scholar of the time. *Thousand and the nights* came from Persia and was adapted and transformed simply at Bagdad. And (Masudi : *Golden Meadows*, IV. 90.) *Almageste of Ptolemy*, *Elements of Euclid* and some *Pahlavil* and *Syriac* books were also translated.

However it was in 217 H. (832 A.D.) Caliph Mamun gave a great impetus to learning by founding an official bureau of translation, *Dar el-hikmet*. At the head of the department was placed the eminent scholar Honein, son of Ishak, who held the same position under the successors of Mamun, Motasim, Watik and Motewekkil. Honein was born at Hira in 154 H. (809 A.D.). His father was an apothecary of Ibadite family and when he was young he came to Bagdad to study medicine. But finding it unsatisfactory, he went to Byzantium (Constantinople), where he learnt Greek, studied medicine for two years under reputable masters and brought back with him many valuable manuscripts. With the collaboration of others, especially Abu Kafir Yahya son of Zakarya and Saadya Gaon, Honein translated the Bible into Arabic. Honein also

was either about the hoarded wealth of other peoples which their covetous hearts longed for or the enchanting vision of voluptuous *Houries* in paradise with seductive black eyes to beguile pleasantly the idle hours, or it was simply the raving madness of a religious hallucinatory. They

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translated into Syriac *Hermeneia*, *Generation and Corruption*, *Soul*, the book I of *Metaphysic* and part of *Analytic of Aristotle*, the works of *Hippocrate and Galen*, *Archimedes and Appolonius*, *Republic Laws* and *Timee of Plato*, the commentories of Themistius on the works of *Aristotle*, especially *Physic*, *Ethics*, *Categories*, and the book I of *Metaphysic*.

Ishak son of Honein translated into Arabic *Sophist of Plato*, *Metaphysic*, *Soul*, *Generation and corruption of Aristotle* with diverse commentaries of *Alexander of Aphrodisia*, *Porphyre*, *Themistius* and *Ammonius*.

Yahya son of Patric translated in Syriac *Aristotle's History of animals* and *Timee of Plato*.

Abu Ali Ysa translated into Arabic *Aristotle's Categories*, and *History of animals* with the commentary of Philiponus.

Tabit translated into Arabic *Oftima secta* of Galen and the commentary of Proclus on the *Golden Verse* of Pythagoras.

The mathematician Abu Jaffar el-Khazin (Ibn Ruh) translated the commentary of Alexander of Aphrodisia on Aristotle's 'Physic' from syriac into Arabic.

This vast amount of translation-work was not in vain. Soon sprang up independent writers, who assimilating the foreign thoughts, produced encyclopædic works of their own. They were called *Falasifah* (singular, *failasuf*), after Greek philosophos, (philos=loving+sophos=wise). Those who exclusively followed the native thought and were not influenced by the foreign cultural influence and intellectual investigation, that is men versed in theology based on Coranic traditions were called *hakim* or *naeir*. Shahrastani mentions about twenty names who were entitled to the honorific title of *failasuf* in the Arabian literature, of which the following were really distinguished : Honein son of Isha, Tabit son

never created any synthetic philosophy nor was there any attempt at the solution of the cosmic problems. Nor is there any germ of any investigation in the Bible or the Koran, as is found in the sacred books of the Indo-Aryan races.

of Korrah, Yahya son of Adi, Yakub son of Ishak el-Kindi, Mohamed Abu Nasr el-Farabi and Avicene.

Yakub el-Kindi had a great renown. Born of an illustrated pure Arab-tribe of Kindah of Kahatan race, he was really the founder of the Arab-school of philosophy and was called *failasuf el-Arab* (philosopher of Arabia). To him are attributed the authorship of nearly 265 works. He translated into Arabic the Book (n) of Aristotle's *Metaphysic*; commented on the first and the second books of *Analytic*; made abridged translation of *Hermeneia*, *Isagoge* and *Poetry*, wrote a treatise on *Categories* and *Order of the books of Aristotle*. He translated also the *Geography of Ptolemy* and re-made the geometrical works *Elements of Euclid* and *Almageste of Ptolemy*. EL-Kindi composed a monumental psychological work on *Intelligence*. His notable disciple was Abu Said whose *Book of creation and history* holds a distinguished place in the Arabic literature.

Hohammed son of Tarkhan Abu Nasr el-Farabi, however was the most popular philosopher before Avicene. He did a prodigious labour. El-Kifty wrote of him thus: "He surpassed all his contemporaries and surpassed them in the explanation in the books of logic; he cleared their obscurity, discovered their hidden meaning, facilitated their understanding and condensed the most useful parts in an incomparable lucid style and showed the defects which escaped el-Kindi. Farabi wrote *Introduction to Logic*, *Compendium of Logic*, commentaries on *Isagoge*, *Categories*, *Hermeneia*, *Ethics*, *Rhetoric* and *Organon*. He also wrote many metaphysical treatises as *Intelligence and Intelligible*, *Mind*, *Unity and one*, *Substance*, *Time*, *Space*. Science neither escaped him. He wrote commentaries on Aristotle's *Physic*, Ptolemy's *Almageste* and wrote treatises on *Meteorology*, *Movement of the celestial bodies*, *The heaven and the*

However to judge the Aryans from an ideal or the present standard, they would not appear in a very favourable light, though they might fare better in comparison with the Semites and the Mongols. We must not forget the crude times in which they lived. They were also

*universe.* On occult sciences he wrote on *Alchemy, Geomancy and Dreams.* El-Farabi was called *el moallim et-tani* (the second master), after Aristotle being the first. However to the popular mind el-Farabi was known as a political idealist and visionary by his celebrated work on political philosophy, the utopian *Model-city* after the fashion of the ideal *Republic* of Plato. It fired enthusiasm and caught the fancy of generations of men, thus creating discontentment with the existing order, and germinated more or less the cause of the disintegration of the mighty Saracen empire.

When Avicenna (Ibn Sina 980-1037 A. D.) appeared, the vast and extensive Arab Dominion brought under one central suzerainty by fire and sword, was already in decrepitude and was splitting up into fragments. Avicenna was the last and the most brilliant of the Mahameddan intellectual genius.

Abd Allah Sina, the father of Avicenna was originally a resident of Balkh, but moved to Bokhara where he practised the profession of a money-changer. Abd Allah was a liberal man. He had two children, of which Avicenna was the eldest, born of his wife Afshana in the superb Kharmeitan in the year 375 H. Avicenna received a good education and was a brilliant and industrious student. Abd Allah became a convert of Egyptian Ismailian faith and he harboured the missionaries in the house and from their conversations young Avicenna learnt with avidity the strange doctrines of metamorphosis and immortality of the soul and they taught him also the secular arts, the Greek philosophy and geometry and Indian calculations, the last of which he followed assiduously with the instructions of a Hindu grain-merchant of Bokhara. He later became the pupil of Ibrahim and Natali, but the *Metaphysic* of Aristotle remained to him incomprehensible though he read it 40 times before he found out by chance el-farabi's commentary on it

covetous and wished for other people's property, wives and daughters. But they were not so cruel perhaps. They were imbued with strong feelings. They had the potential germ of great progress when mixed with the other races, especially the peace-loving and contemplative Turanian.

and all the obscure passages became clear to him *and the gate of science lay open to him* as he navelly expresses it and the next day he distributed plentiful alms to the poor of the city as a thankfulness to Allah's magnanimity.

Avicenne was a voracious writer though he was compelled, due to the political unsettled conditions of the translational time, to fly from country to country sometimes under distressing circumstances of penury, poverty and danger of life. His chief writings are *Shifa* and *Najjat* encyclopædic works on science, medicine, mathematics, physics, logic and metaphysics. However his *Isharat* an abbreviated expression for *Kitab el-isharat wattanbihat* is no less important. His other compositions are: *el-hikmet el-arundiet* (Philosophy of Arundi), his first writing dedicated to the name of his patron; *el-hidaset fil-hikmet* (Guide of wisdom), *et-talikat fil-hikmet el-filsafiet* (Notes on Science of Philosophy); *Oyoun el-hikmet* (Fountains of wisdom); *Kitab el-ansaf* (Book of fragments), *Kitab el-mojjah el-kebir fil-mantik* and *Kitab el-ausat* books on Logic; *fi takasim el-hikmet wa'l-olum* (Divisions of sciences); *risalet finnefs* (Epistles on Soul), *Monazarat fin-nefs* (Opinions on Soul), *fusul fin-nefs* (Chapters on Soul); *fil-Kowa el-insaniet wa idrakatiha* (Human faculties and their perceptions); *risalet el-akhlak* (Treatise on Manners); *risalet et-tair* (Treatise on Birds), *risalet el-kodr* (Treatise on Destiny); *Kitab el-maad* (Book of Soul) on transmigration; *hikmet el-maut* (Philosophy of Death); *el-hikmet el-mashrakiet* (Oriental Philosophy); *hikmet el-ishrak* (Philosophy of illumination); *el-adwiet el kalbiet* (Remedies for the heart diseases); *Or juzah el-mansamah* (Poems on Medicine); *risalet fil-Kimia* (Treatise on Alchemy); *fi alat rasadiet* (Instrument of Astronomy), he also wrote some other books as his famous *Medicinal Canon*,



The next stream of Aryan immigrants came from the higher Euphrates valley, more or less mixed with the native population and of swarthy *dhumru* complexion and they reached Dvaraka or Dvaravati (in Kathiwar) by the sea-route. † The chief tribes consisted of Yadus (Yadava-janas), Purus, Drhyus, Anus, Turvasas, Bharatas (later absorbed in the Kurus), Tritsus, Matsyas, Cedis, Krivis (later known as Panchalas). They at first settled in the maritime province of Dvaraka and one of the Yadava chieftains\* married the daughter of king Mandu, but according to the Jaina legend, they later migrated to Panchala, owing to a terrible earthquake in which many Yadava princes perished and they established a powerful kingdom in the Madhya-desa under the leadership of the Bharatas, from which the country has been since designated as *Bharatabarsa* (the abode of the Bharatas).

These new immigrants were well-fitted for empire-building. They were in contact with the two most powerful empires of the then world, namely the Egyptian and the Assyrian which were hoary with age and traditions.

*Chapters on Hippocrates on Medicine, Fevers and Tumours*; the astronomical works as *The situation of the Earth in the Universe*, and in Persian he composed *Hikmet el-Alai* a book of philosophical aphorisms after the name of his patron.

As the biographer of Avicenne beautifully expresses that Avicenna had the most powerful soul; but his dominant faculty was erotic which occupied him often and by its undue indulgence he sapped his vitality and breathed his last at the premature age of 58 in 428 H. and on him ran this popular satirical saying: "Sheikh el-Rais has made no utility of his Science of Medicine and Science of Astronomy. Neither his *Shifa* has cured him of the pain of death nor *Najjat* has saved him."

† Kathake Sanhita, XI. 6. Vedic Index, Tol. II. p. 247.

The Vedic tribes who preceded them and came by the Oxus-Kabul river route and settled on the banks of the Indus and her tributaries, knew nothing of this nation-building process. They were content with the tribal state or City-state, of which their fellow brethren in Greece made a brilliant example. For we find when Sudas, chieftain of the Tritsu clan won a decisive victory on the banks of the river Parushni, over a confederacy of ten clans, he did not know how to take advantage of the opportunity and to consolidate them into a powerful state and kingdom, while in the Madhya-desa we find extensive and powerful kingdoms and magnificent courts.

Perhaps they immigrated to India, between 1800 to 1400 B. C. due either to a military disaster with the Assyrians, or to a tribal feud, for the Aryan tribes were very quarrelsome, and though they often combined against a common enemy in self-defence, they always fought among themselves when there was no external danger.

A recent discovery of some Hittite tablets, made by Mr. Winckler at Boghazkeni in 1906, gives an important clue and probably the key to the solution of the problem. The following is the content of a tablet, a treaty between Shubbiluliuma, king of Hatti and Mattiuaza, king of Mitanni, son of Dushratha or Tushratha and everything indicates that both of them were Aryan kings.\*

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\* Mr. Winckler published the purport of his famous finding in M. D. O. G. No. 35 (1907) with partial translation of the Hattite treaties and the Harri-Aryan question in O. L. Z. 1910, cols 289 f and the entire text of the treaty appeared in 1916, entitled *Keilschrift-texte aus Boghaskoi* and this has been translated into English by Mr. D. D. Luckenbill and published in the American Journal of Semitic Languages and Literature, in Vol. XXXVII, No. 3 (April 1921).

TREATY-TABLET, BETWEEN SHUBBILULIUMA OF  
HATTI AND MATTIUZA OF MITANNI.

Obverse.

1-16 :—When with the Sun\* Shubbiliuma, the great king, the valiant, the king of Hatti, the beloved of Teshub† Artatama, the king of Harri made a treaty and thereafter, Tushratha, king of Mitanni, exalted himself against the king of Hatti, the valiant (then I) the great king etc. exalted myself against Tushratha, the king of Mitanni, the lands on this side of the river (west of Euphrates) I plundered and Mount Niblani I restored to my dominion. A second time Tushratha, the king acted presumptuously toward me. Thus he spoke : "Why dost thou plunder that side of the Euphrates which belongs to Tushratha, the king ? If thou dost plunder the lands on that side of the Euphrates, I also will plunder the land on that side of the Euphrates. Tushratha, the king is desirous of keeping this (region) intact, but if thou plunderest them (these lands), what am I to do for them ? I shall cross over to this side of the Euphrates 'whether it is lamb or a child I hear ?'. (Whereupon I) the great king displayed (my) might before him. Now against the father of the king of Hatti Ishuwa had rebelled. The Hittites entered Ishuwa (country). The people of Kurtalisha, the people of Arewanna, Zassha, Kalama<sup>h</sup>, Timna, Mount Haliwa, Mount Karna, the people of Durmitta, Alha, Hurma, Mount Harana, half the land of Tegarama, the people of Tebursia, the people of Hasga, and the people of Armatana, against my father they rebelled. But (I) the Sun Shubbiluliuma, the great king etc. defeated them. At that time the people who had escaped from my hand, these entered Ishuwa, and whatever peoples or lands there were that rebelled against my father, these as subjects of Ishuwa in the midst of hostile land were dwelling.

17-24 :—Now (I) the Sun Shubbiluliuma, etc. took measures

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\* A title of loyalty of the Hittite kings.

† The chief god of Hatti identical with the Babylonian storm-god Adad.

against the presumption of Tushratha, the king. The Euphrates I crossed; against Ishuwa I marched and Ishuwa in its totality I devastated. For the second time I brought them into servitude to me. The people and the lands who in the time of my father had gone over to Ishuwa, namely the people of Kurtalesha, the people of Arawanna, Zasshesa, Zegarama, Tuimina, Mount Halina, Mount Karna, the people of Durmitta, Alha, Hurma, Mount Harana, half of Tegarama, the people of Tebursia, the people of Hazga, the people of Armatana, those peoples and lands I conquered and restored them to Hatti. The lands which I seized I set free, their (former) place(s) they occupy. Indeed all of those peoples whom I set free, returned to their peoples and occupied their (former) places (s) in Hatti.

25-29, 6-10 :—Again (I) the Sun Shubbiluliuma etc marched against Alshe. The fortress of Kutmar I stormed and gave (it) to Antarahi of Alshe as a present. The fortress of Shuta I entered. The fortress of Shuta I took as my plunder. I brought (its booty) into Washukkani. Of the fortress of Shuta, oxen, sheep, horses, their property as well as their booty I brought back to Hatti. As for Tushratha the king, he marched against me, but he did not get into the fight.

30-37, 11-19 —I returned, crossed the Euphrates and overpowered Halpa and Mukishhe. Tukuwa, king of Nia came to Mukishhe (to enter into) covenant with me. Behind the back of Tukuwa, Akit-Teshub, his brother roused land and city of Nia to hostility. And Akit-Teshub, won over these Marianna (lit. turned them to me), Hishmia, Asiri, Zulkia, Habahi, Parria and Niruwaci together with their charriots and their men were brought into agreement with Akia, king of Arahti. They seized Arahti and rebelled saying: "Let us fight the great\*king, the king of Hatti." (I) the great king, the king of Hatti overpowered them in Arhati and seized Akia, king of Arahati, Akit-Teshub, brother of Takuwa, all of their Marianni, together with their possessions, I brought to Hatti.

37-47, 20-28 :—When I went against Nushashshs, I seized all of its lands. Sharrupshi escaped to distant parts. His mother, his brothers, and his sons I seized and brought to Hatti. Takilesharri

*the servant of Sharrupshi, over Ukulsat as king I set. Then I marched to Abina. But I had no thought of attacking Kinsa, when Shutatarra with Aitakhamma, his son and his chariots marched out against me to give battle. I defeated him and they fled to Absuia. Shutatarra, together with his son, Marianni, his brothers and their.....(I seized) and brought to Hatti. Against Abina I marched and Ariwana, king of Abina, Luambadura, Akparu and Artaia, his nobles, came out against me to give battle. All of these, their land, together with their possessions to Hatti I brought. Because of the presumptuousness of Tushratha the king, for one year I plundered all of these lands and brought them to Hatti. From Mount Niblani, from that side of the Euphrates, I restored them to my dominion.*

**48-58, 29-39 :—***When his son<sup>1</sup> waxed strong, with his servants he slew his father Tushratha, the king. And when Tushratha, the king died, Teshub gave a decision in favour of Artatama and his son Artatama he spared. But all of Mitanni went to ruin. The Assyrians and the Alsheans divided it among themselves. Up to this time (I) the great king etc did not cross the other side (of the Euphrates); neither 'hama'\* nor 'hussapa' of Mitanni did I carry off. Now when the great king etc heard of the misery of Mitanni, the king of Hatti, sent palace servants, oxen, sheep and horses. But the Harri people became discontented and Shutatarra with the Marianni tried to kill Mattiuasa, the prince. He escaped and before the Sun Shubbiluliuma etc, he came. The great king spoke thus :—"Teshub has rendered a decision in his favour" Whereupon I took Mattiuasa, son of Tushratha, the king into my hand and placed him on the throne of his father. In order that Mitanni, that great country might not go into ruin, because his daughter looked upon Mitanni with favour (Shayambara ?), I the great king the king of Hatti took Mutliuasa, son of Tushrath into my hand and gave him my daughter in marriage.*

**59-67 :—***(And I commanded) that Mattiuasa, the king's son, should be the king of Mitanni and the daughter of the king of Hatti should be queen over Mitanni To thee Mattiuasa, ten women*

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\* 'Hama' is a plant; possibly Homa=Shoma.

are to be allowed. But no second wife is to be advanced over my daughter. Thou shalt not send a second wife into her presence. No one shall...her house. Thou shalt not bring my daughter into the position of a second wife. In Mitanni she shall (rule) as queen. The children of Mattiuaza and the children of my daughter, their children and their children's children shall (rule) in Mitanni in future days. And in future days the Mitannians shall plan no rebellion against Mattiuaza, the king's son, or my daughter, the king's daughter (or their) son's sons. Mattiuaza the king's son, in days to come (to my sons) shall be a brother, he shall be an equal of theirs and the sons of Mattiuaza, the king's sons or the sons of mine or grandsons of mine.....to my grandsons shall be a brother, he shall be an equal.

68-73 :—The Hittites and the Mitannians in the days to come with an evil eye (shall not) look upon each other. The Hittites shall do no evil to Mitannians and the Mitannians shall do no evil to the Hittites. When the king of Hatti is at war with an enemy, then the king of Mitanni (shall seek the welfare of the king of Hatti) and when an enemy of Mitanni or an enemy of (the king of Mitanni appears) then the king of Hatti (shall seek) the well-being of the king of Mitanni.

74 :—(The son) of Mattiuaza (I) the great king, the king of Hatti.....75.....(any treaty) which I the great king shall make.....  
...76.....the law of Mitanni... ..

### Reverse.

35-53, 13-29 :—A copy of this treaty (tablet) was placed before Shumash (god) of Arinna, for Shamash of Arinna grants kingship and queenship. And in Mitanni (another) was placed before Teshub (Keshab?), lord of Kurinni of kappa Kinship, yea, kinship, let them proclaim, before the king of Mitanni and before the Harri. And now if any one before Teshub, lord of Kurinni of Kappa, shall change this tablet or put it into secret place ; if he break it or alter the words of the writing of this treaty, may the god of secrecy and the gods whom the one who has taken the both by the lifting of the hand has (invoked), may they stand and may they give ear. For they are the witnesses. Shamash of Arinna (Aryans?) who grants

*kingship and queenship in Hatti, Shamash, lord of heaven, Teshub, lord of Hatti, Sheri, Ashsharra, (of) Mount Nauni, and Mount Hassia, Teshub, lord of trade, Teshub, lord of the camp, Teshub, lord of the relief, Teshub of Betiarick, Teshub of Nirik, Teshub, lord of mounds, Teshub of Halab, Teshub of Lihisura, Teshub of Shamhuha, Teshub of Hurma, Teshub of Sharishsha, Teshub of Shaganuwa, Teshub of Hishshashhappa, Teshub of Tahaia, Teshub of ...bika, Teshub of Kizzulona, Teshub of Uda, the Lamassu (protecting deity) of Hatti, the Lamassu of Goraham, Zithariash, Karsish, Hapanta, the Lamassu of the plain, the Lamassu of the air, the Lamassu of the mountains, Liliwanish, Ea and Damkina, Telibina of Dnrmitta, Telibina of Hanhana, Ishar, Muttariha (brilliant), Ashgawaba, Nisaba, Sin, lord of the oath, Ishhara lady of the oath, Hebe lady of the heaven, Hebe of Halpa, Hebe of Uda, Hebe of Kizzulani, Zamama, Lamama of Hatti, Zamama of Illaia, Zamama of Arzia, Iarish, Lapnash, Hashmilesi, Hantedashishuush of Harma, Abaru of Shamuha, Gudahha of An... ..the queen of Kask.....Mamma of Tahurpa, Hallara of Dunna, Gaxbac of Hubeshna, Bilala od Landa, Niawannish of Landa, gods of Limahi, the gods of Habiri, the male gods, the female gods, all of them of Hatti, the male gods, the female gods of Kissadni, the gods of the earth, the river-god Namshara, Minki, Ammuki, Tusushi' Ammissadu, Alalu, Anu, Antum, Enlil, Ninlil, Nin-egal, the mountains, the rivers, the great sea, the Euphrates, heaven and earth, the winds, the clouds.*

**54-69, 30-37 :—***Teshub, lord of heaven and earth, Sin and Shamash, lords of heaven and earth, Teshub lord of Kurinni of Kappa, Nurgel of Kurta, Teshub lord of Uhushunma, Easharri, lord of wisdom, Ann, Antum, Enlil, Ninlil, the gods Mitrashshil,\* the gods Nashatiaino, Ellalshu, Shamawumunushu, Teshub lord of Washshukkani, Teshub lord of all of Irrete, Partahi, of Shuta, Nabarwa, Shrubu, Ashur, the star, Shala, Nin-egal, Damkina, Ishwara, the mountains, the rivers, the gods of heaven and the gods of the earth, the words of this treaty may they stand and may they give ear. For they are the witnesses. If then Mattiuaza, the king's son and the Harri does not keep the words of this treaty, then*

\* The god Uruwanshil, the god Indar.

*Mattiuaa and the Harri, together with your land, together with your wives, together with your possessions, may the gods, the lords of the earth destroy you like radish (?) from its stalk (?) may they drag as from a 'bubaawahi' having no.....And then Mattiuasa together with the second wife whom thou shalt take and the Harri together with your wives, your sons and together with your land, in that they have no seed, may these gods who are lords of the oath give you poverty and want. And then Mattiuasa may they overturn thy throne. And thee Mattiuasa together with thy land, may these gods by whom thou hast sworn, break thee like a reed. Thy name and thy seed by the second wife whom thou shalt take, from the earth may thy seed be destroyed. And thou Mattiuasa together with thy land (like) a tablet set aside, not sent from the midst of Harri shall (thy) name perish. The land, may it be devastated and uprooted. The land of your country, truly it is 'saku' which has been closed (?); it shall go under, it shall not survive. And then Mattiuasa and the Harri, you are enemy of the thousand gods. May they overcome you.*

*If thou Mattiuasa, the king's son and the Harri, this treaty and oath dost keep, then Mattiuasa together with thy wife, the daughter of the king of Hatti, his sons, his grandsons, the Harri together with your wives, your sons and your grandsons, may these gods keep you; and may Mitanni as of old may it return to its (former) position, may it prosper, may it grow. And thee Mattiuasa, thy sons and thy grandsons by the daughter of the king of Hatti, may they give thee the land of Harri (?) as an everlasting kingdom; may the throne, may Mitanni grow old.*

#### Obverse.

1-9:—( When I ) Mattiuasa son of Tushratha, king of Mitanni handed over to Shuttarna, son of Artatama ( king of Harri ) of Mitanni, Artatama the king, his father, did what was not right. His palace ( ? ) .....together with his possessions he wasted to give them to Assyria and Alshe, he wasted them. Tushratha my father built a palace, filled ( it ) with treasures, but Shuttarna destroyed it, he overthrew it. The.....of the king, head bands of silver and gold, vessels of silver from the 'house of vessels' he



*smashed and to none of the..... of his father and his brothers did he give anything. But toward the Assyrian, the servant of his father, who was bringing the royal tribute to him became friendly and the treasures he gave him as a gift.*

**8-20 :—***Thus (1) Mattiuaza, son of Tushratha the doors of silver and gold which Saushshatar, the king, the father, of my grand father has taken from Assyria by his might and power and had set them up in his palace in Washukkani and then Shuttarna in his meanness gave them back to Assyria. All sorts of precious vessels of silver and gold he gave to Alshe. And the palace of the king of Mitanni, together with its wealth and treasure he ruined, into the dust he brought it. The palace he destroyed and the houses of the Harri he ruined. He caused the nobles to be taken to Assyria and Alshe, he carried them off. They came back and in Taite they crucified them he ruined all of them. The Harri and Akit-Teshul (Achit Keshab?) then fled from before him into Karaduneash (Kar-dunya=Northern Babylonia extending over to Media) they entered. With two hundred chariots he fled. But the king of Karaduneash (Media?) took for himself the two hundred chariots and their belongings, all that Akit-Teshub had brought along. And Akit-Teshub and his Marianni he persecuted and tried to kill him. Against me Mattiuaza, son of Tushratha, the king, he fought, but I tore myself out of his hand. Through the gods of the sun Shubbi lulumma etc. I escaped by a road which was not they pursued us. The gods of the king of Hatti and the gods of the king of Mitanm helped us to come before the sun Shubbilulumma."*

Because these tablets were inscribed in cuneiform, it does not preclude the idea that they were Aryan people. The very names of the men and the gods inspite of the perversion of a foreign phonetical transliteration, as Tushratha (Dasharatha), Indar (Indra) unmistakably show their Aryan origin. Babylonian lineal script was the fashion of the day. Everybody knew it in western Asia. We find that even the Egyptian governors in their private correspondence, used it with their own king

Amenophis IV. as the finding at Tell el-Amarna shows. King Dushratha in a letter to his daughter Gilukhipa, who was married to Pharaoh Amenophis III. (about 1400 B.C.) used the same cuneiform in the beginning, but after a few sentences, he reverts to a strange script, which has not yet been deciphered. Perhaps it was the primitive *Brahmi lipi* and which with the great Aryan exodus, from the northern Euphrates valley, which the Hittite treaty indicates, was brought into India by the Dvaraka-Puri route. The son of Gilukhipa Pharaoh Amenophis IV. became an ardent worshipper of the sun-god of her mother Aton and in his ardour changed his own name from Amenhotp (Ammon is satisfied) to Akhenaton (pious to Aton) and he erased the name and the figure of the national god Ammon from the public monuments and temples and substituted for it the sun-disk with streaks of light radiating from it. This enraged and shocked the priests and the public sentiment to such an extent that he was compelled to leave the magnificent capital of Thebes whose patron deity was Ammon and build up a new capital in 1360 B.C. at Tell el-Amarna in the plain of Hermopolis on the edge of the desert and which he called Ekhataton (the horizon of Aton), and with the confiscated revenue from the temples of Ammon and the tribute from Syria and Cush, he adorned the new city of his god with munificence. But soon after his death which happened in 1350 B.C. the new capital and the new god was deserted and the seat of the empire was removed to Karnak with the restoration of the god Ammon-re as the head of the pantheon and Aton only as a minor deity.

The third and the last batch of important Aryan

immigrants came through the dizzy Chitral Gilgit passes and descended into the Gangetic and the Jamuna plains. Due to the increasing aridity of the Indus basin, there could not be any longer a continuous stream of peaceful settlers, who must have followed the footsteps of the first Vedic Aryan conquerors, with their wives, sons, daughters and cattle. The encroaching desert sands proved too formidable for that. So this last body must have been adventurous, bold warriors. And being unable to bring their women with them on such a risky journey, they took unto themselves wives, from the native population. So the Pandava chieftains who must have led this expedition, five brothers, Yudhishthira, Bhima, Arjuna, Nakula and Sahadeva took as their common wife Draupadi, a system of polyandry, still prevalent in Tibetan countries. Perhaps they were long settled in the border lands of Tibet and adopted their custom and possibly, due to a local insurrection or a foreign invasion, they were compelled to leave the country and they descended into the inviting fertile and rich Gangetic-Jamuna basin. Then Kaurava princes were ruling at Hastinapura over the Bharata tribes, who were the first to build up the empire and to extend the Arya might and prestige even as far as Lanka or Tambrapana (bright as copper) that is Ceylon, as is depicted in the Ramayana. The deplacment of the Bharata rulers by that of the Kauravas must have certainly caused much heart-burning and dissension among those Aryan tribes who came from the upper Euphrates valley and settled in the Madhya-desa and founded opulent and extensive kingdoms. The new adventurers, led by the Pandava chieftains with the connivance and assistance of the Panchala (Krivis), Yadava and Matsya

tribes and the military support of the powerful Dravidian ruler Krishna of Dvarka overthrew the Kaurava domination after a fierce and sanguinary struggle and established their own supremacy. After the Pandavas were well seated in power, the court-poets must have then found it opportune to ingratiate themselves into the royal favour, by inventing the story of the wickedness and treachery of Dhritarastra and the rape of Draupadi in his hands, thus to reconcile the public sentiment and to popularise the new administration.

The origin of the Pandavas as recorded in the Mahabharata, the book devoted to their praise, is also very mysterious. One can not but fail to notice in reading the great epic that the court-bards and compilers were trying to make the Pandavas appear in noble light to be so admired by the populace, but in spite of all their attempts, ugly facts peep out here and there to cast doubt on the proud geneology of the Pandavas and their exemplary character and heroic deeds.

Santanu was a great king of the proud lineage of Bharata. For his great qualities the kings elected him as *Samrat* (emperor). Santanu married Ganga and through her had a son, Devavrata who was popularly known as Visma. Once on an excursion to the woods on the Yamuna, he saw a pretty fisherman's daughter, who was plying ferry on the river and fell in love with her. But Satyawati, the fisherman's daughter, was obdurate. She would not consent to his love unless he promised to make her the queen and her son the heir to the throne. Santanu could not give such a promise. He loved Visma and Visma was highly esteemed by the people and he was unhappy. When Visma came to learn

this, he solemnly renounced his right to the throne and promised never to marry to avoid future conflicts. Satyavati before his marriage with Santanu, gave birth in unmarried state, to a son Krisna Dvaipayana. While plying a ferry-boat, she had aboard a passenger Parasara and love over-powered them both and Dvaipayana was the result. Santanu had two sons with Satyavati, Chitrangada and Vichitravirya. Chitrangada died before he attained his maturity. And Vichitra-virya also followed his brother ere long after ascending the throne, leaving both his queens Ambika and Ambalika childless. Satyavati asked her illegitimate son Dvaipayana to raise children with Ambika and Ambalika to preserve the Kuru family. Ambika closed her eyes at the dark and the repulsive look of Dvaipayana, and so it is said Dhritarashtra was born blind; Ambalika became pale and terrified, so her son was called Pandu. But as Satyavati wanted a healthy and beautiful offspring as a glory to the Kuru race, she asked her son to raise an issue again. Ambika and Ambalika being both unwilling to cohabit with him, they sent to the bed of Dvaipayana a slave girl and Vidur was born of this union.

Dhritarasta being blind, Pandu ascended the throne. Pandu had two queens, Kunti and Madri. Pandu being impotent, he asked his wives to raise children with others. It is said Yudhistira was born to Kunti through Dharma, Bhimasen through Maruta and Arjuna through Indra; Nakul and Sahadev were born to Madri through Asvina. Now Dhrma, Maruta, Indra and Asvins being mere deities, it is clear that the parentage of Yudhistira, Bhima, Arjuna, Nakul and Sahadev being uncertain, it was ascribed to the gods. Kunti too before her marriage had an

illegitimate son whom she threw into the waters of the Ganges to escape the social odium, scandal and disgrace and the cast-away son was Karna, born of her union, as it is said with Surya, the sun-god. If Karna was really son of a god, why was she ashamed, why did she faint when she heard that Karna was present in the tournament ?\*

It is evident that the Pandavas lacked respectable ancestry and the court-poets after their unfair victory attempted to give them one and in which they miserably failed.

Who were these great Aryans, whose children to-day more or less control the destiny of the world and whose language and traditions have been stamped almost on civilised humanity and where did they originate and when did they come to India ? Here opinions vary and none of these questions can be answered with definite assurance.

According to Virchow the Aryans originated in the orient ; in India according to Sclegel ; in Asia according to Link ; in Bactria according to Picket ; in the countries situated between the North Sea and the Ural Mountain (Huxley) ; in south-west of Siberia (Pietrement) ; in the central and the western region of Germany (Geiger and Loher) ; in Scandanavia (Jules de Klaproth). The philologists differ no less in their conclusions than the opinions of the afore-mentioned anthropologists. According to Friedrich Max Muller, in the south-west of Europe ; in Central Asia (Jacob Grimm, Pott and Sclegel) ; in the Volga region (Schrader) ; in the Baltic territory according to Hirt ; in Saptasindhava, according to Abinaschandra Das.

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\* Adi-parva, Chapters, 63, 95, 100, III, 123.

It may be possible that all these learned scholars may be partially right in their judgment. For the Aryans like all other races migrated from country to country for countless ages with the advancing and retreating glaciers and it is probable that they traversed all these territories.

There are two striking passages in the Zend-Avesta which are explanatory on the subject. One of them unequivocally proves that the Caucasus region was the home of the Aryan. Ahura Mazda says :—

“The first of the good lands and countries, which I, Ahura Mazda, created, was the Airyana Vaego, by the good river Daitya.” Vendidad, I. 3.

Now as the river Daitya has been identified with the river Aras (Araxes of the Sassanian time) rising in the holy Mt. Ararat and falling into the Caspian sea, it is easy to imagine how from this central location the streams of Aryan immigration could scatter into different directions, one branch crossing the Ural passes (for at that time it is possible the Caspian sea extended to the Ural mountains and the Ural river was not yet formed and that region filled with silt) and entering into Europe, and the other branch entering into Armenia and the upper Euphrates valley and the Indu-Aryan branch migrating to Iran, Mouru (Merv), Bakhdhi (Balk), Haetumant (Helmend), Ragha (Rai), Vaekereta (Kabul), Haptahindu (Shapta-shindu=the Punjab).

But this apparent simple solution is deceptive, for the next passage is disconcerting and robs us of such an easy victory. It says of another land which undoubtedly was the tradition of the race at that time :—

“There are ten winter months there, two summer months ; and those are cold for the waters, cold for the

earth, cold for the trees. Winter falls there with the worst of the plagues." Vendidad, I. 4.

It is certainly the memory of the Scandanavian sojourn. It clearly indicates that the Avestan-Aryans knew of the northern regions where the winter lasts for 10 months and the summer only for the brief period of two months. And when the Teutonic settlers (the northern branch of the Aryans) arrived at the Northern country, they already found it occupied by a brunette people, less advanced, of crude stone age culture, of brachy-cephalic skull and of short stature. Kean and Repley think that they belonged to the Iberian wave of population that swept over Europe in the van of Celts. Hansen believes they belonged to the Alpine race. Their type was of dark hair and eyes, generally broad-skulled and of medium to short stature. They were not entirely wiped out by the invading Teutons, but many of them in the southern part especially in Denmark, where there was little chance for migration, were conquered and enslaved. Farther north they were driven into narrow strips of land along the coast or into the more heavily forested parts of the interior. The blond new-comers in the meanwhile helped themselves to the best land in the river-valleys and the grass-clad open spaces on the hill slopes, choosing territory which was desirable either for cultivation or for grazing.\*

Many authorities believe that the Finns of the Sagas (Mongoloid Ural-Altic, short, dark brachycephalic race) were the same. Lapps perhaps entered from North-western lands and the Finns are a cross between the Teutons and the Lapps.

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\* Hansen—Old tidens Nordmaland, P. 14.



This proves two things. Either the Aryans were a very new people which is contradicted from the forms of their physical development which we know from their legendary myths and sagas and the complexity of the structure of their speech (inflectional), the basis of all Indu-European language. Or some Negroid races migrated to northern Europe, which was very easy, as Europe was connected then with Africa, and the Strait of Gibraltar is but of recent formation and if it did not, it could not any way impede their crossing it as we find the Nigritos peopling distant islands in Oceania and crossing the ocean in their frail canoes. We also find numerous Negroid skulls in southern France. In northern Europe they have lost a good deal of their pigments and become more or less bleached and their morphological structure modified as an environmental adaptation, the size of the cranium enlarged as a provision for the increasing neural cells, which had to be developed; for in a climate where the winter was severe and long, man had to use his thinking powers in order to procure shelter, food and raiment for such a durable confinement. While in a warm climate as in central Africa or Borneo, man had very few needs and he required little thinking to obtain them. He could sleep in trees, feed on berries, fruits and worms and on hunting and when he developed farther he could scratch the ground and deposit there the seeds of bananas, bread-fruits, cocoa-nuts or corns which needed hardly any attention and they were ample for his simple needs and sustenance. Self-preservation and self-reproduction, acquisition of food and desirable mates 'for sexual needs\* or the pang of

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\* Sexual tumescence is the end product of nutrition and the utility of the organic surplus energy.

hunger and love have been the two great schools of self-development in all ages for lower organisms as well as for man, the biotic impulse reacting on all of them alike. And during the great world-winter, the glacial epoch with its advancing ice-sheet, these northern wanderers were compelled to retreat southwards and in the Caucasus region they found a sense of racial consciousness and a happy dwelling place, until they were dispersed, either due to internal feud, foreign pressure or need of food-supply for the increasing population as an impetus for racial expansion. And every where they found the land occupied and invariably by a brachy-cephalic people. This necessarily made them as an aggressive-defensive measure, a hardy, well-disciplined fighting people.

At what age did the Aryans arrive in India? This question cannot be positively answered. Attempts have been made to ascertain it.

Aryas found in Shapta-Shindava Dassyus; Iranians fought them as Turans; the Greeks established their supremacy by conquering the Pelasgians; the Romans by subduing the Etruscans. The Dassyus and the Turans belonged to the same race and were possibly the offshoots of the Akadian and the Sumerian people. The Etruscans were but a western variety of the Pelasgians and probably were affiliated with the Ligurians, Iberians, and Libians, that settled in the Mediterranean basin, belonging to the same stock which Sergi calls the *Mediterranean Race*.\*

This opens an interesting vista. It is well known that the Lybians were the original inhabitants of Egypt. And Mr Rawlinson has found after close observation, and

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\* G Sergi : The Mediterranean Race, a study of the origin of the European peoples.

study of skulls, ancient sculptures and painting that the ancient Egyptians had Negroid traits. He says :—"The fundamental character of the Egyptian in respect to physical type, language and tone of thought, is Negritic. The Egyptians were not Negroes, but they bore a resemblance to the Negro which is indisputable. Their type differs from the Caucasian in exactly those respects which, when exaggerated, produce the negro. They were darker, had thicker lips, lower foreheads, larger heads, more advancing jaws, a flatter foot and more attenuated frame. It is quite conceivable that the negro type was produced by a gradual degeneration from that which we find in Egypt. It is even conceivable that the Egyptian type was produced by gradual advance and amelioration from that of the negro."\* It is true that Egyptians once suffered a disastrous defeat from the hands of Ethiopians, who established a dynasty in the middle of the eighth century B.C. but it was ended before 660 B.C. They were known as the Kush by the Semites and Kesh or Ekosh in the hieroglyphics. They can not be identified with the terrible Hyksos (Shepherd Kings) who like a terrible, imperious and irresistible wave about the 17th century B.C., swept over Egypt wrought carnage and destruction to whatever they could lay their hands on, and who for the secret service, delivery of the military plans and system of defence to the new invaders by the Jews who were then taking asylum in the land to escape from a famine that was then raging in Palestine, made Joseph, the Israelite chieftain, a high dignitary and minister of state (Genesis, 46. 32-34). They were certainly some-

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\* George Rawlinson : The story of Ancient Egypt, P. 24.

nomadic hordes from the Arabian desert as their deity *Anath* clearly indicates. From this it is clear that the Egyptians evolved out of the Negroid through gradual transformation, as lead evolves from radium through the reduction of its atomic electrons. And as it appears through the painstaking investigation of Sergi that the peoples habiting the Mediterranean basin were of one brachycephalic race with slight local variations, it might prove that the Caucasian race which is dolichocephalic and of which the Aryan (Indo-European) is a branch, might have developed those peculiarities for which the race is distinguished, through reactions of the climatic and geographical changes in its wanderings from Africa to Arctic regions and its retreat therefrom back to Caucasus through the Russian steppes and from which centre later, when the racial consciousness and language were fixed, it scattered again in all directions, either due to pressure of population or whatever other causes.

When did the Aryas come and settle in Shapta-shindava? This question, though often earnest attempts have been made, can not be answered with any positive assurance. Lexical criterion is no sure basis as F. Max Muller thought, though it might throw a broad searchlight and give a clearer perspective; neither mythology nor traditions. For they can be all borrowed by one race from another. Astronomical calculations based on the observations of the relative position of the stars and planets, as found in the Vedas, are neither very reliable; for the Vedic hymns might have been the traditional heritage of the race and were simply collated in India, though those observations were of remote ancestry and in distant lands. Archeology to a certain extent gives the

relative ancientness of past civilisations. In this respect the Aryans seem to be very young people.

Mr. Flinders Petrie has found wrought iron in a prehistoric cemetery at Gerzeh near Meydum of about 6000 to 7000 B.C.\* There have been found also very beautiful and artistic Egyptian potteries of the same period, now scattered in all the principal European museums.† "The 1st to 3rd (Egyptian) Dynasties ‡ have left at Abydos large forts of brickwork, remains of two successive temples and the royal tombs. Elsewhere are but few other monuments. At Wadi Maghara in Sinai is a rock sculpture of Semerkhet of the 1st Dynasty in perfect state, at Giza is a group of tombs of a prince and a retinue of the 1st dynasty and at Giza and Bet Khallaf are two large brick mastabas with extensive passages closed by trap doors, of kings of the 3rd Dynasty. The main structure of this age is the step-pyramid of Sakera which is a mastaba tomb with eleven successive coats of masonry, enlarging it to about 350 by 390 ft. and 200 ft. high. In the interior is sunk in the rock a chamber 24 x 23 ft. and 77 ft. high, with a granite sepulchre built in the floor of it and various passages and chambers branching from it. The doorway of one room (now in Berlin Museum) was decorated with polychrome glazed tiles with the name of King Neterkhet."§

In Babylonia at the sea port of Eridu, was the great

\* Records of the Past, Vol. X. P. 315.

† Encyclo. Brit. Vol. IX. P. 75.

‡ According to Petrie, the 1st dynasty was about 5510 B. C., the 2nd dynasty, 5247 B. C., and the 3rd dynasty 4945 B. C.

§ Encyclo. Brit. Vol. IX. P. 74.

temple of Ea-the culture god. "It is now about 130 miles distant from the sea ; as about 46 miles of land have been formed by the silting up of the shore since the foundation of Spasinus Charax (Muhamrah) in the time of Alexander the great, or some 115 ft. a year, the city would have been in existence at least 6000 years ago".\* Mr. Hilprecht, the scientific manager of the Pennsylvania University Babylonian exploration, found at Nippur a drain in terracotta built about 4500 B. C. (P. 401). And the famous Baal temple was built by Naran-sin (3800-3750 B. C.) (P. 391). The water conduit was erected on solid masonry by King Ur-gur about 2700 B. C. (P. 372) and there were T-pipe joints in the drainage system (P. 396). Corbelled brick arch has been found in good condition of the period of 2500 B. C. (P. 420) and a multiplication table in the Temple-library of 2300 B. C. as 5 adu (time) 1=5 ; 5 adu 2=10 ; 5 adu 3=15 ; 5 adu 4=20 etc. 5 adu 19=95 ; 5 adu 20=100 ; 5 adu 30=150 ; 5 adu 40=200 ; 5 adu 50=250 ; 25 adu 1=25 ; 25 adu 2=50 ; 25 adu 3=75 ; 25 adu 4=100 etc. 25 adu 19=447 ; 25 adu 20=500 ; 25 adu 30=750 ; 25 adu 40=1000 ; 25 adu 50=1000. 90 adu 1=90 ; 90 adu 2=180 ; 90 adu 3=270 ; 90 adu 4=360 etc. 90 adu 19=1710 ; 90 adu 20=1800 ; 19 adu 30=5700 ; 19 adu 40=7600 ; 19 adu 50=9500.†

From the cultural point of view, when Sargon (3800 B. C.) conquered Akkad, he found there magnificent temple-libraries and there were expert priest-astronomers, who predicted eclipses by means of the "Saros". And

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\* Encyclo. Brit. Vol. III. P. 100.

† P. 523, Hilprecht Explorations in the Bible lands during 19th century.

they discovered it long ago that this is cycle of 18 years-11 days or 223 lunations. These priest-astronomers not only computed the return of the planet Venus to a given starting point in the sky in exactly 8 years but they had also established similar periodic relations in 46, 59, 79 and 83 years respectively for Mercury, Saturn, Mars and Jupiter. They therefore became later quite competent to determine in advance the approximate position of the planets with reference to ecliptical stars which served as fiducial points for their determination and they predicted and announced in the temple notices generally a year ahead the times of the new moon and the calculated intervals to the first visibility of the crescent, from which the beginning of each month was reckoned; the dates, the exact time and other peculiarities of the predicted solar and lunar eclipses as well as the heliacal risings and settings, conjunctions and oppositions of the planets. They were also well aware of the inequality of the daily motion of the sun, but misplaced by 10 degrees the perigee of his orbit and their sidereal year was  $4\frac{1}{2}$  m too long and they kept the ecliptic stationary among the stars, making no allowances for the shifting of the equinoxes. The Zodiac almost as it is to-day was arranged by them before 2800 B. C.

In China, according to 'Shu Chung' equinoxes and solstices were determined by means of the culminating stars in the third millennium B. C. and the emperor Yao about 2300 B. C. put to death two official astronomers for making an inaccurate prediction of a solar eclipse. They knew of the conjunction of the solar and lunar year in a nineteen year cycle. From hoary antiquity they made observations in the meridian, regulated time by

water-clocks' and used measuring instruments of the nature of armillary spheres and quadrants. About 1100 B. C. the astronomer Chow Kung determined with surprising accuracy the ecliptic and there are cometary records in the official annals from 2296 B. C.\*

In this relative comparison of the ancientness of civilisations, the Aryas make a very poor and pathetic showing. In the misty horizon of tradition, the western branch of the Aryans (the Greeks) fought the Trojan war in 1193 B.C. led by Agamemnon of Mycenae, when the gods and the mortals intermarried and lived together in happy comingling. However the Mÿcænian civilisation should not be confounded with the Minoan, which was that of the native population and the great Minoan palaces have been brought to light by recent excavations, at Crossus and Pheastus and an interesting royal abode at Hagia Triada (in Crete) with drainage, fine statuary, artistic potteries, vases, oil-jars, and pictographic writing antedating the Trojan war by more than 1500 years. Of the eastern branch of the Aryans, the Medes appear for the first time in historic light, when the Assyrian conqueror Shalmenster II, in his war against the tribes of the Zagros, received tribute from Amadai and Sagon II in 715 and 713 B.C. sent expeditions against the Medes and subjected them "to the far mountain Bikni (the Elburz-Demavend)." And they had a hereditary caste of priests who were called *Athravans* (the fire-kindlers). In the second half of the 7th century B. C., Media recovered her independence and under Phraortes and his son Cyaxares, if Herodotus is to be believed, she became a very powerful kingdom, with

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\* Encyclo. Brit. Vol. II. P. 809.



Acabatana as its capital, and from that time Media ruled over the greatest part of Iran, Assyria, and northern Mesopotamia, Armenia and Capadocia, until the overthrow of the empire by the rebellion of Cyrus in the reign of Astyages, son of Cyaxares in 553 B. C. ; and Cyrus himself became the ruler of the major part of the vast empire. The Babylonian king Nabonidus (747-734 B.C.) designated the Medians and their kings as *Mandas* (nomads), which is corroborated by a striking passage in the Zend-Avesta, as follows :—

“If they find it easier to remove the dead, than to remove the house, they shall take out the dead, they shall let the house stand and they shall perfume it with Urvasni, or Vohu-gaoma, or Vohu-kereti, or Hadha-næpata, or any other sweet-smelling plant.

If they find it easier to remove the house than to remove the dead, they shall take away the house, they shall let the dead lie on the spot, and shall perfume the house with Urvasni (rasan plant), or Vohu-gaoma (benzoin), or Vohu-kereti (aloe), or Hadha-næpata (pomegranate) or any other sweet-smelling plant.” Vendidad, VIII. 1. 2-3.

What can this removable house be but a nomad's tent or a reed-hut ?

The Iranian, a different way of pronouncing *aryan*, came later on the stage. They were by nature fierce and warlike tribes, like all ‘nomads, and when they conquered Elam, which was too tempting to resist, they utterly destroyed it ; its people were carried away and scattered, its princes slain or dragged into bondage, its cities and temples sacked and turned into dens for the beasts to lie in, its trees burned and irrigation destroyed. Teispes (Chishpaish) son of Chieftain, named Achaemenes occupied

it and assumed the title "Great king, king of Anshan.". After his death Cyrus I (Kurush) occupied the throne of Anshan (Elam) while another son Ariaramnes (Arya-Ramana) ruled in Fars. Cyrus (559-530 B. C.) on mounting the throne of Babylon thus inscribes as to this geneology :—

"I am Cyrus (Kurush) the great king, the powerful king, the king of Tintir (the ancient name of Babylon), king of Shumir and Akkad, king of the four regions ; son of Cambyses (Kambujya), the great king, the king of the city of Anshan, grandson of Cyrus, the great king, king of the city of Anshan, great-grandson of Teispes, the great king, the king of the city of Anshan."

Darius (522-486 B. C.) or Darayavush as his Iranian name, made a similar inscription in the Behistun rock in which he says :—

"I am Darius the great king, the king of kings, the king of Iran, the king of nations, the son of Hystaspes (Vishtaspa), the grand son of Arsames, the Achaemenian.

Says Darius the king :—My father was Hystaspes ; of Hystaspes the father was Arsames (Arshama) ; of Arsames the father was Ariaramnes (Arya-Ramana) ; of Ariaramnes the father was Teispes (Shishpaish) ; of Teispes the father was Achaemenes (Hakhamanish).

Says Darius the king :—On that account we are called Achaemenians. From ancient times we have descended ; from ancient times our family have been kings.

Says Darius the king :—There are eight of my race, who have been kings before me ; I am the ninth. In double lines we have been kings."

However with all boast of Darius, the Iranian branch of the Aryans can not claim any respectable

antiquity and his ancestry does not go farther than the ninth century B. C.

Only the chief Hittite kingdom, the powerful state of Mitanni, as revealed by the recent treaty-tablet found in 1906 at Boghaz Keui the ancient Hittite capital, dated about 1400 century B. C., in which the names of the Aryan gods, as Indra, Varuna and Mitra appear, as well as the mythological names as Hari, Achit-Keshaba and Dasaratha, belonging to the solar dynasty, "extended its sway as early atleast as 2100 B. C. to Assyria proper".\*

The arrival of the Vedic Aryas in Shapta-Shindhavas, can not be so definitely ascertained. The Rig-veda, the oldest collection of the Arya tradition and myths, seems to be an exegesis of their gods. Those hymns unquestionably are of different periods and of different countries, the precious heritage of the Aryas and they were systematized and edited very late when they advanced far into civilisation and cultural acquisition. However it seems they had not yet reached the banks of the Ganges, for we find that only mentioned in the tenth Mandala which is the latest addition. However the Indus and some of her tributaries were crossed, otherwise the Usha (the dawn-maiden) could not be addressed as one who "In shining light, before the wind arises, comes gleaming over the waters, making good paths". Bal Ganghadar Tilak, basing his views on the mention in Aitraya Brāhamana of Prajapati (the personification of the Sanscrit year) trying to approach Rohini (constellation) and on the astronomical fact that the Indian vernal equinox once began when the year was in Mīrgasira,

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\* Morris Jastrow : Aspects of religious belief and practice in Babylonia and Assyria, P. 27.

that is *Mirgasira* was in the *Ritu-Basanta*, divides the period of the Vedas into three : 6000—4000 B. C. for Rig ; 4000—2500 B. C. for Sama ; 2500—1400 B. C. for Yajur. Pandit Bhagawandas Pathak in his "*Hindu-Aryan Astronomy and Antiquity of the Aryan Race*" says that he found the description of the planets in the Rig-Veda in the Ocrean Period, which he calculates about 5000 B. C. and the *Judhistira* era 2448 B. C., but unfortunately he does not cite his quotations. Shankar Diksit in his *Bharatya Jyotisha Shastra Itihasa* calculates that the *Satyapatha Brahmana*, Kanda II, was composed as early as 3000 B. C. which means that the Vedic period must have been at least 1000 years older. He bases his conclusion on a passage in the *Satyapatha Brahmana*, Kanda II, which conclusively proves that in that period *Kritika* nakshatras rose in the east and must have been therefore, on the celestial equator, which was exactly the position 5000 years ago.\*

In the Rig Veda, there is no direct mention of the planets and the stars as in the *Atharva Veda*, but it seems, the knowledge of them was implied in X. 55. 3 in which *Indra* shines in forty-three lights, which probably was calculated on the sun, the moon, five planets and 27 *nakshatras*. In I. 162. 18. the sacrificed horse is ripped into 43 parts, perhaps to the heavenly lights, for the horse has only 36 ribs. And if this interpretation is correct, it carries us to the Vedic period between 2780—1820 B. C.

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\*. *Eta ha vai prachai dishona chyavante, Sarvani ha va anyani nakshatrani prachyai dishashchyavanti. Satyapatha Brahmana, Kanda II. "These (the Kritikas) do not sweep from the east, while all other Nakshatras do".*