SHEET-IRON HOUSE.—A system of building houses entirely of sheet-iron has been communicated to the Society of Architecture in Paris. The walls, partitions, roofs and wainscoating are composed of double metallic sheets, separated by an air mattress, which is surrounded by different non-conductors of heat.

THE SPEED OF FISHES.—As a general rule, it is said to be a very difficult matter to gauge the speed of fishes. The fast fishes are trim and pointed in shape, with their fins close to their bodies. The dolphin and bonito are thought to be the fastest; and, although their speed is not known, they are fully capable of twenty miles an hour.

TANNING BY ELECTRICITY.—It is reported that in France a process has been invented by which leather is tanned by electricity in from 24 to 95 hours. The hides are placed in large cylinders with a decoction of tannin, and an electrical current passed through the drum, which revolves slowly. The leather is more pliable and of greater strength.

AN EXPLOSIVE PLANT.—In Mexico there is a small Euphorbiaceous tree, named *Hura crepitans*, which ejects its seeds from the capsules with a very loud and disagreeable noise. Dr. Schrenk, of Mount Carmel, Ill., has discovered that the *Euphorbia marginata* of the Western plains—the "Snow on the Mountain" of our gardens—does the same on a small scale. The seeds on expulsion are thrown six feet.

DURABILITY OF ROMAN MASONRY.—"In old Roman masonry work," says *Engineering News*, "the several blocks of stone were united by strong iron clamps, which effectually prevented the formation of cracks. To avoid corrosion of these clamps, they were thickly coated with lead. which seems to have proved an excellent protection. Recent excavations near Moirans, France, which laid bare the remains of some Roman water conduits, are said to show this in a striking manner. Several large square blocks of dressed stone, weighing in the neighbourhood of a hundred-weight each, which were there found, were united by such lead-covered clamps, which had become so firmly imbedded that the blocks could be separated only by blasting. The iron, even after the lapse of eighteen centuries, is said to have been in a good state of preservation."

THE WOOD SUPPLY OF GREAT BRITAIN.—From a paper recently read by Dr. W. Shlich we learn that about twelve million pounds sterling are paid every year for timber by the British Empire, and the author pointed out that the United Kingdom had waste land amounting to over 26,000,000 acres, one-fourth of which would be sufficient to produce all the ordinary timber now imported into the country. Part of this was, of course, wanted for other purposes; but still, if systematic forest management were introduced, a great deal of timber might be produced. The author urged that, in spite of the constitutional aversion of Englishmen to State interference in anything like an industry, it was most essential that energetic steps should be taken to prevent the serious consequences that would arise from a failure of the wood supply of the Empire. Nominal interference only would be disastrous. The forests must be treated in a systematic manner and the State should either set aside certain areas for forest purposes or by legislation take upon itself the management of communal and even private woodland. He pointed out the great improvement which had recently taken place in India since the Forests Departments had been reorgonized, and a competent staff of officers provided, to be reinforced by those educated at Cooper's Hill College. Dr. Schlich also placed before his hearers an exhaustive account of the action of the Australian colonies with regard to the regulation of wooded lands by the State, contending that in no case had sufficient steps been taken to ensure a lasting and continuous supply of timber.—*Industries*.

GAS-RESISTING PLANTS.—Those who reside in urban and suburban districts, and make use of gas for lighting their rooms and apartments, know to their cost that comparatively few plants will thrive for any length of time under such conditions. Ferns of the hardier kinds will retain their freshness for a week or two; but even these will gradually assume a yellowish or sickly hue, and eventually die. The same with the numerous other subjects that town lovers of flowers are persuaded to buy of itinerant hawkers. There are, however, a few good plants that we can safely recommend for the embellishment of rooms, even though they are lighted and heated by gas. The best of them, perhaps, is the variegated parlour palm (*Aspidistra lurida variegata*). There is also a green-leaved variety of the same subject suitable for a like purpose. Then the cabbage palm (*Corypha australis*), date palm (*Phœnix dactyliferas* bungalow palm (*Seaforthia elegans*), fan palm (*Chamærop*) *excelsa*) and the dwarf fan palm (*Chamærops humilis*) are all well adapted for growing in rooms. The same may be said of the india rubber plant (*Ficus elastica*), providing the temperature does not fall below 40 deg. in winter, Australian silky oak (*Grevillea robusta*), and the hardy dragon trees (*Dracœna indivisa, Dracœna congesta*). Care, of course, must be taken in regard to the watering, or even these will succumb; but, providing this is judiciously performed, no one need hesitate to attempt the culture of any of the above in their rooms.—*Amateur Gardening*.

THE ARCTIC CITY.

A.D. 2190.

To divulge the means would be to betray a discovery communicated to me by a scientist who thought he was famous for his inventions, but was yet afraid to publish his method of looking into the future, in case his fellow mortals should set him down as mad, like Brown-Séquard.

I was transported three hundred years into the future and saw around me the altered city of Montreal.

Its unearthly magnificence appalled me, knowing the world only as it had been so many centuries before. Its edifices towered, apparently, into the very clouds, along avenues of vast beauty. One had a front of polished black porphyry, while its entrance was an arch a hundred feet broad. Its neighbour was built of great, bold, greenish blocks of glass. Next that, a third rose dreamlike in traceries of different coloured marbles, far eclipsing the elegance of our great white Cathedral of St. Ambrose of Milan. Glorious sweeps of recessed balconies with gardens upon them, added to the palatial grandeur of these edifices. Nor did they darken the streets, for a soft light, independent of the sun, was diffused imperceptibly from under all their cornices and projections, adding an appearance to them suggestive of Arabian Nights. Gardens and parks were introduced everywhere at short distances, as well as on the roofs and terraces of the buildings. The entire island, twenty-one miles long by eight wide, was included in this great city, which revealed tall vista after vista. It contained sixteen million souls. Of the many further details—products of a mighty science—which met my eyes, I may but mention, as the season was Christmas, that the avenues and squares were spanned with an unbroken covering of crystal arches, within which the town *manufactured a summer climate in spite of December*.

The Canadians of that day as I saw the...,—

"Let us introduce ourselves," said a voice at my side, "a man of the twenty-second century to the representative of the nineteenth. I see you are the first to use the method of the study of history by transference. As a specialist of that method among ourselves, I have been observing you make the transition, and come here to meet you."

The smiling eyes which met mine belonged to a straight, graceful man, clothed in a light Elizabethan costume and a short silk mantle thrown across his shoulders.

I answered him, bewildered.

"Our age must seem to you like a dream," said he. "It was so with me the first time I went into the past. Come to my home in the Arctic and be my guest."

"Good heavens, it is an opium vision!" thought I. But he had turned, and I followed.

"What's this?" I asked, in trepidation, hesitating to enter the kind of *salon* into which he led, where many, costumed like himself, were placing themselves.

"Fear nothing in our life," he said. "We have overcome all chances of accidents. Your 'wrecks' and 'catastrophes' are but painful incidents of history to us. This is the projectile for Toronto—which takes the place of your railway trains. By means of an explosive, as was romanced of by Verne, this car, externally oval, will be shot to a height of seventy miles above the cloud-line and fall at Toronto into a receptacle which receives it on a cushion of air controlled by water. The principle produced in your day, the marvellous water-balance elevator."

A tremour passed through the *salon*.

"In three minutes," said he, looking at a time-piece in the ceiling, "we shall be in Toronto."

I rushed to the strong window which I saw in the floor and gazed down transfixed, as we rose above the mists and lands across which we were darting with frightful swiftness. At our highest elevator it was possible to make out for a short time the outlines of the St. Lawrence River on the snowy expanse, by its dark water. Things blurred again, there was a slight shock, the door slipped back, and we walked out into a city such as we had left—Toronto.

By a second projectile, we were "shot through" to Winnipeg, then across crowded plains to Prince Albert, and so forth, and finally into the great City of Logan, on the Arctic coast, at the mouth of the Mackenzie River, then bound in ice. I knew by the darkness of the window on the last stage of the journey that we had entered the range of the long Polar night of winter. The unearthly tales of desolation, starvation and cold, which I used to read with a shuddering fascination in the narrative of Kane, crowded into my memory, and though I am stoical—even brave—by constitution, my heart fell. I wished myself back in my own lifetime. A sensation as if I were falling sheer down the well of a prodigious elevator came over me, and I involuntarily cried out.

The passengers, whom I had hitherto scarcely noticed, except as part of the scene, rose and came around me. The noble kindliness of their glances created a glow of peace about. It was happiness to have such beautiful people look in my face, and I forgot all fear "Who is he?" they whispered among themselves, but refrained from asking aloud. My friend bade me take heart a few moments. Shortly the projectile stopped, opened its portal, and revealed a Paradise of architecture and foliage. Human ingenuity had conquered the Polar conditions! This was the Arctic City of Logan!

My protector, Brander, for such was his name, descendant of an ancient Icelandic family of Manitoba—led the way through the avenues and talked to me with interest equal almost to mine.

"The modern world holds your generation deservedly in honour. It was by standing firm to your nation, and the Empire, that progress and fraternity have advanced so swiftly in the world. The fruit of strong living by early men has always been reaped by later time."

"How is that? What has taken place us?"

"Your having held to the Empire, as your traditions taught you, kept it together at a critical period. The completion of the civilization of India was made possible. The Dominion of Australia grew into stability and wonderful greatness. Likewise the Dominion of Africa. We of Canada, well, you see us. Friendship and reason brought the United States once more into Anglo Saxon alliance.

The twentieth century saw the dissemination of civilization to the whole of man. By its close, the Tribunal of Nations had made universal peace a fact, Comity of Courts established universal justice; one scientific education, one scientific theology, were freely accepted everywhere; the high development of machinery abolished the disadvantages known as poverty and thus achieved Socialism. Today, you see us living where and how your fathers would never have dreamt of."

A marvellous city was this Logan. Touch the walls wherever you were—in the streets, in the chambers, in your private study—telephonic and "electro-visual" connections with any other place or person responded. All earth, Brander explained, was covered with a vein-work of electrical devices.

He touched an ornamental stone flower on the side of a building. Right on the street wall, a mirror-like picture sprang to view, of the stupendous machinery of giant fly-wheels and Titanesque swift-running coils, by which the public works of Logan were kept in operation. "Machinery does all our work except that of the brain," he remarked.

"Then," exclaimed I, "I understand the swiftness of your progress and the brightness of your powers, for leisure is the air and water of high thinkers. Would that your forefathers understood that better!"

"General leisure alone would be ruinous. The human sapling needs to be pruned and digged about to its very maturity. We have kindergartens and gymnasia. After those, this."

Wise though he was, he bowed with the deference due by a younger to an elder, and touched the stone flower again, while a view sprang to sight of a garden that might have been the Academia of Plato in ancient Athens. There men robed in Greek costume walked discoursing with one another, along paths beautiful with statues and cypress trees, and one, standing on the steps of a temple, spoke to a number of what the new sages had learnt about immortality. I heard his words.

The Modern shut off the scene quietly, and we sped—I know not how, except that it was by some consequence—to the edge of the town towards the north, into a hall in which were many of his people. It was the Town Hall. Space prohibits telling of its wonders; of daily life in the city, as I saw it; of the industries and resources of that Arctic region; of its innumerable quarries of rare stones, its gems, peat, metals, summer cattle-grasses, seal farms and ice supplies, its tourist and summer travel, its relations with the teeming Provinces of the Saskatchewan.

We mounted in an elevator moved without guidance to the top of the tower, which rose twelve hundred feet above the covering of the town, and looked out on the one side on a thousand luminous colonies of the city, sunk in the thick plains of snow, and on the other upon the tremendous, silent icebergs of the Polar Sea. The brilliant gleam of part of a full moon, shining over the shoulder of a jet-black cloud, illuminated two of these silver mountains and glimmered upon the black water over which they sailed as moving promontories through packs of drift ice. A white bear was swirling on a cake of ice past the nearest. Several wolves reclined upon the other. We heard them crash against one another slowly but more terrible than a battery of thunderbursts. Along the water beyond them drifted others, and beyond these reaches of dim white representing more. In the background was the mysterious darkness of the unknown North.

Solemnity fell upon me. "Had you time," he whispered, "we would loose the crystal air-yacht of the Tower, fly with it into that wild darkness and you should look down upon that spot to discover which your people so eagerly and frequently spent heroic blood—the Pole! But quick! ask me what question you may, for I see that you return."

"Tell me then," I cried, "what is the greatest of your secrets, you people of such might and wealth?"

"Here it is," said he. "We were swept forth in the crystal air-yacht to the portals of a distant berg which had been carved and sculptured into a cathedral—the playwork of a magic race. Never has anything been seen like the celestial gleaming of that church of light in the Polar blackness, and the internal coruscations of its high shafts and vaults. Many were bending there in prayer, and a great choir of children were singing lustily the old, ever-new chant:

> "Glory to God in the Highest,
> On earth peace;
> Good will to men."

Verily, the clearness of that singing pierced the centuries back two thousand years.

"The greatest of our secrets," Brander loudly cried (but his voice and the music were dying faintly together), "is that *material things are nothing, but spiritual things are all!*"

* * *