中文导读英文版

Man the Miracle Maker

发明的故事

[美] 房龙 著

清华大学出版社

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内 容 简 介

Man the Miracle Maker 的中文译名为《发明的故事》，书中以通俗的语言叙述了关于人类一些最基本的发明故事，本书由荷兰裔美国著名历史学家、作家房龙编著。

为了生存，人类充分运用自己的智慧，发明了第一件衣服、第一根绳子、第一座桥、第一只碗等。发明使人类的手、脚、嘴、眼、耳等基本器官的功能得到进一步扩大，使用棍棒使人手的力量变得更有效了，借助车轮使人们“走”得更快，借助飞行器可以将人的身体牵引到空中……人类又是如何从简单的发明到发明机械、建造房屋、发明飞机的呢？本书将对这些奇迹的产生娓娓道来。

无论作为了解发明基本历史的读本，还是作为语言学习的课外读物，本书对当代中国的读者都将产生积极的影响。为了使读者能够了解每段故事的概况，进而提高阅读速度和阅读水平，本书在每段故事的开始部分增加了中文导读。

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亨德里克·威廉·房龙（Hendrik Willem Van Loon，1882—1944），荷兰裔美国人，20世纪美国最伟大的历史学家、科普作家和文学家。上世纪20年代开始，他的著作陆续被介绍给中国的读者，翻译者把这个荷兰名字汉化为“房龙”。此后，这个名字为我国读者所熟悉，流传下来。

房龙1882年1月出生于荷兰鹿特丹。幼年时对历史、地理、船舶、绘画和音乐感兴趣，这种兴趣终其一生也未放弃。房龙10岁时便立志要当一名历史学家。父亲对他专横偏粗暴，而母亲却百般溺爱。从8岁起，房龙先后进入一些著名的寄宿制学校，学习了拉丁文、希腊文和英文，他的才智迅速提高。1902年20岁的房龙来到美国，进入康奈尔大学，并在康奈尔大学完成了本科课程。1911年房龙获德国慕尼黑大学博士学位。房龙求学前后，当过编辑、记者、播音员，也先后在美国几所大学任教，游历过世界很多地方。房龙多才多艺，能用十种文字写作和与人交流，拉得一手小提琴，还能画画，他的著作中的所有插图全部出自他自己手笔。

1913年，房龙编著并出版了第一本历史书《荷兰共和国的衰亡》，虽然销路一般，但受到书评界的赞扬。1920年圣诞节期间，房龙出版了他的第二本书《古代的人》，这是一部带插图的通俗历史读本，市场反应良好。经过知识、阅历、研究成果等方面的积累，房龙于1921年出版了他的第三部历史著作《人类的故事》，并一举成名，从此房龙迎来了他创作丰收期。之后，房龙陆续出版了《发明的故事》、《圣经的故事》、《美国的故事》、《房龙地理》（《人类的家园》）、《人类的艺术》、《宽容》、《与世界伟人谈心》、《伦勃朗传》、《荷兰共和国兴衰史》、《太平洋的故事》等二十多部著作。房龙的作品在当时可谓饮誉世界，荷兰、德国、法国、瑞典、丹麦、芬兰、挪威、日本、印度、苏联、西班牙、意大利、波兰、匈牙利、希腊等国都翻译出版了他的作品。

自20世纪20年代开始，房龙的主要作品几乎被同步介绍给中国的读者。房龙深入浅出的通俗文风和百科全书般的渊博知识，对与之同时代的中国读者产生了巨大的影响。这是因为，一方面是房龙的文风正好适合于当时新文化运动所提倡的生活化的白话文，房龙的书也为中国求知者提供了关于人类和自然的启蒙知识；另一方面，房龙的写作技巧也给中国当时的作家以很多启发。历史学家和著

前言

名报人曹聚仁回忆说，20 世纪 20 年代，他在候车时偶然买到《人类的故事》中译本，“那天下午，我发痴似的，车来了，在车上读，到了家中，把晚饭吞下去，就靠在床上读，一直读到天明，走马观花地总算看完了。这 50 年中，我总是看了又看，除了《儒林外史》、《红楼梦》，没有其他的书这么吸引我了”。郁达夫曾说：“房龙的笔，有一种魔力……是将文学家的手法，拿来用于讲述科学……无论大人小孩，读他书的人，都觉得娓娓忘倦了。”20 世纪 80 年代是中国改革开放的年代，房龙的作品重新被发现，且被逐步引进。而自 20 世纪 90 年代后期开始，国内兴起“房龙热”，房龙的作品再次受到读者的青睐，这是因为他的著作特别符合现代中国人的心理气象：务实进取的时代，读书趋向于知识性、趣味性。

目前，国内已出版的房龙著作形式主要有两种：一种是中文翻译版，另一种是中英文对照版。其中的中英文对照读本比较受读者的欢迎，这主要是得益于中国人热衷于学习英文的大环境。从英文学习的角度来看，直接使用纯英文的学习资料更有利于英语学习。考虑到对英文内容背景的了解有助于英文阅读，使用中文导读应该是一种比较好的方式，也可以说是该类型书的第三种版本形式。采用中文导读而非中英文对照的方式进行编排，这样有利于国内读者摆脱对英文阅读依赖中文注释的习惯。基于以上原因，我们决定编译房龙系列著作中的经典，其中包括《人类的故事》、《圣经的故事》、《房龙地理》、《宽容》、《发明的故事》、《美国简史》和《太平洋的故事》，并采用中文导读英文版的形式出版。在中文导读中，我们尽力使其贴近原作的精髓，也尽可能保留原作的风格。我们希望能够编出为当代中国读者所喜爱的经典读本。读者在阅读英文故事之前，可以先阅读中文导读内容，这样有利于了解故事背景，从而加快阅读速度。我们相信，这些经典著作的引进对加强当代中国读者，特别是青少年读者的科学素养和人文修养是非常有帮助的。

房龙始终站在全人类的高度在写作，他摈弃了深奥的理论，却拥有自己独立的思想和体系，他的论述主要是围绕人类生存与发展等本质的问题，贯穿其中的精神是科学、宽容和进步，他的目标是向人类的无知与偏执挑战，他采取的方式是普及知识和真理，使它们成为人所皆知的常识。房龙毕生持人文主义立场，在有的问题上不免有与马克思主义不同的观点；同时，由于他是生活在 20 世纪早期的美国作家，其思想的观点不可避免地会受到时代和历史的局限，比如在他的《房龙地理》一书中错误地将西藏放到“中亚高地”这一章，而不是“中国”这一章来讲述，又比如他以地理环境决定论来解释日本近代侵略行为，希望读者朋友阅读这些著作时能够甄别。

本书主要内容由王勋、纪飞编译。参加本书故事素材搜集整理及编译工作的还有郑佳、刘乃亚、熊金玉、李丽秀、熊红华、王婷婷、孟宪行、胡国平、李晓红、贡东兴、陈楠、邵舒丽、冯洁、王业伟、徐鑫、王晓旭、周丽萍、熊建国、徐平国、肖洁、王小红等。限于我们的科学、人文素养和英语水平，书中难免不当之处，衷心希望读者朋友批评指正。

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前　言

Foreword

古时候的人仰头看见浩渺的天空，如同穹庐笼盖四野。那时，他们认为，地球就是宇宙的中心了。

但是，当人们能够看得更遥远时，却发现“宇宙中心”这个宝座不是随随便便就可坐上的。地球只是围绕太阳运转的一颗行星，连太阳也只是浩瀚银河边缘的一颗恒星。宇宙，在人们的视野中一下子扩大了。

计算长度的单位显然不够用了。在衡量星际距离时，必须要在“公里”这样的单位后面缀上若干个零。后来，有人以光线在一年中所走的路程为单位，提出了“光年”的说法。但是，与无边无际的宇宙比起来，用光年作为长度单位仍会捉襟见肘。

当地球不再是“宇宙中心”时，人好像也不再应该沾沾自喜。人只不过如同宇宙中的一粒尘埃。但是，要让人的世界观发生如此的转变还是有些困难的。人们仍然困顿于自己的日常琐事，而对那宇宙中的伟大事件漠不关心。

另一个世界也将展现其无边无际，只不过是朝着另一个方向。在微观粒子世界中，人们也将为那微乎其微而诧异。

世界向无穷处蔓延，而人类只存在于这一瞬。但是，人的有趣之处在于：当认识到自己存在的微小后，人们非常愿意去看看这个宇宙究竟有多大。

于是，人们开始了探索和发现。面对这个在眼前展开的世界，人们在思考，在细细察看纷纷扰扰的来龙去脉。这将是一项伟大的事业。

In the beginning everything was very simple. The earth was the center of the universe. Heaven was a large dome of beautiful blue glass.

At night the little angels pricked holes through that dome and behold! There were the stars.

But one day a courageous man, armed with a threepenny telescope, climbed to the top of a tower and took a long mad serious look.

From that moment on there was trouble.

First of all, the sun had to be requested to move to the center of the universe. Next it was discovered that our farfamed solar system was not a "universe" at all but a mere insignificant detail of a mysterious and vast project which in turn was an even more insignificant detail of an even more mysterious and vaster plan which was vaguely supposed to be an absolutely insignificant detail of an out-of-the-way corner of the Milky Way.

These revelations caused great perturbations not only among the theologians but also among the mathematicians and astronomers. Thus far they had been able to measure the distance between the earth and the moon and even that between the earth and the nearest planets with the help of kilometers and miles.

But now, when the famous old human "cosmos" had quite unexpectedly grown into something more important than a convenient stage-setting for a chapter in one of the holy books of the East; when it was gradually becoming evident that there existed stars of such incredible size that the greater part of our own solar system could be hidden inside their bellies without inconveniencing the patients in the least; when the zeros which had sufficed for the simple calculations of our great-grandfathers were multiplying themselves trillion-and quadrillion-fold; it was felt that the time had come to devise a new geometrical standardwhich should keep the astronomers from wearing out their elbows while handling their slide-rules.

For this purpose the so-called "astronomical unit" of 92,-900,000 miles was established. It represented the mean radius of the earth's orbit, and it was a handy enough yard-stick, as long as one did not venture too far away from

home.

But once among the real stars (the big ones, not the little fellows which are our own neighbors) such "astronomical units" became mere trifles, and it was necessary to think of something a little more substantial than a paltry 92,900,000 miles.

Just then Albert Michelson was experimenting with light and had figured out that a ray of fight (of course it is sheer nonsense to speak of "rays of light," but I am using the word because we are still so hopelessly involved in the poetic nomenclature of the Romantic Period that centuries will have to elapse before we shall be able to think in the terminology of the Age of Science)—as I was saying, just then Michelson had discovered that fight is a substance which moves at the rate of speed of 299,820 kin. per second, and this gave some one a bright idea. By multiplying 60 seconds with 60 minutes, the result with 24 hours and this result with 365 days, he came to the agreeable conclusion that light traveled something like 10,418,623,400,000 km. per year. This distance was then called a "light year" and became the tape-measure of the modern heavens.

At first it seemed that now everybody would be happy. Before the introduction of the "light year" Centaur, our nearest neighbor among the stars was 25,000,000,000,000 miles away from us. Afterwards it was possible to say offhand: "Centaur? Oh, yes, a mere 4.35 light years away from us. Almost too close for comfort !"

But alas, the appetite of the astronomers for distances was insatiable. They discovered nice little orbs situated at a distance of twenty or thirty thousand "light years." Then they made a bold dash for the nebulæ, those luminous spots which remind us of microbes seen underneath a microscope, and they figured out that some of them were situated at distances which varied between two and three million light years.

Then, even the "light year" became just a trifle ridiculous.

But who would give us something better?

Now all this is not spread before your admiring eyes for the mere purpose of showing you that I am either a man of profound erudition or a person lucky enough to have acquired an Encyclopædia Britannica on the installment plan. I

am playing these few chords on the instrument of eternity to sound a note of warning in regard to the rest of this book.

When the earth was rudely deprived of her favored position as the "center of the universe" there were those who thought that man, too, was about to be pushed from that high pedestal upon which, by right of eminent arrogance, he had placed himself as soon as he had ceased to walk on all fours. Surely within a universe composed of tens of thousands of nebular spots, each of them bigger than a couple of millions of square light years, man would feel himself reduced to such infinitesimal proportions of insignificance that he would cease to boast about his divine origin and would begin to see himself as what he is—a fairly clever animal and nothing else.

But soon it became evident that such a change in his mental attitude was impossible, that a fire in his own back yard would always be of much greater importance to him than a disastrous volcanic eruption on reddish Antares (which has a diameter of 640,000,000 km.), and that a suspicious knock emanating from the cylinder of his own car meant vastly more to him than the rumor that Betelgeuse (the only fixed star that ever succeeded in breaking into the Sunday supplements, through sheer weight and bulk) was threatened with extinction. Not to forget that dreadful throb in his wisdom tooth which would fill him with a much more profound apprehension for the immediate future of the human race than the information that the faithful old moon was about to join her five former, sisters in oblivion.

And perhaps that was just as well.

For while the astronomers were extending and enlarging the universe until it threatened to become grotesquely infinite, other scientists were tackling the atom and by reducing that hapless mite to smaller and ever smaller proportions, they finally discovered a world of infinitesimally small particles which on a scale of 1/100,000,000,000,000 of a millimeter disported themselves with the regularity and precision of so many full-fledged, ultramicroscopic solar systems and performed such marvels of abbreviated balancing and counterbalancing that the average brain, in ever increasing whirls of dizziness, was forced to refuse to believe such things possible or go stark mad.

No, it was just as well that man should remain the center of the universe.

At least, until that day when he shall have acquired a real brain.

Nevertheless revelations of this sort were bound to have some influence, however slight, upon the attitude of the human race towards the problems of life, and the hero whom you will meet within the pages of this book will prove very different from the patriarch of ancient days, who considered that he had been appointed chief beneficiary of all creation and as such could slay and murder and maim all his neighbors of the animal kingdom and that the universe had no other purpose than to cater to his wants and supply his manifold needs.

He may be the beginning and the end of all things (as he has been told for thousands of years) but in his heart of hearts he is beginning to doubt it, and he is gradually commencing to suspect that there is no beginning and no end, that the "here and now" of a million years ago was pretty much the same as the "here and now" of to-day or the "here and now" of a billion years hence.

He may be the highest summit of perfection among all living matter, but he prefers to suspend judgment until he shall have discovered what sort of life has developed on some of the other billions of stars which keep him company on his voyage through space.

In short, after a detour of several thousand years, he dares once more to be conscious of that noble classical ideal which summed up the philosophy of the desirable life in the magnificent words:

"We are all of us merely human beings and nothing pertainlng to the universe we think foreign to us or unworthy of our attention."

Basing his right of inquiry upon the patent royal of an almost sublime curiosity (that was bestowed upon him on the day of his birth), the hero of this book intends to pry into every, corner, to explore every region, to investigate the hidden meaning of every phenomenon which comes within the reach of human reason and to do this without respect for anybody or anything beyond the limits laid down by that demonstrable truth which shall be the corner-stone of our future development.

If he prove to be successful in his search, he shall let his neighbors know without pride. If (for the moment) he find himself baffled by the difficulties that confront him. he shall confess his defeat without shame and shall leave it to others, better equipped than himself, to try again.

Above all things, he shall say "yes" to Life and, armed with patience and

forbearance and good-natured humor, he shall relentlessly push forward into the realm of the unknown until the little drop of energy which he has borrowed for a short space of time shall be needed for some other purpose, when he expects to surrender the loan without a single word of regret, as he has learned that both life and death are but expressions of one and the same idea and that nothing really counts in this world except the courage with which the ,individual dares to attack the one problem to which there is no definite solution, the problem of existence.

All this, I know, sounds rather complicated.

But it is not half as complicated as you think, if you will only read it rather slowly and try it again a couple of times.

Those who find that job too much for them had better drop the book right here. They would soon be bored and annoyed and they would wonder what it was all about and why it was ever written and they could employ their time much more profitably by going to the movies.

But as for the others, those who have already guessed what I am driving at, they too are not in need of any further introduction. They will understand that while I may not have solved any problems definitely, I have tried very, very hard to show them how certain things happened to happen the way they actually happened because that was the only way they could possibly happen, and along which lines we may hope for the ultimate emancipation of mankind from that cruel tyranny which for so many hundreds of thousands of years has turned this earth into a shambles and which was the direct and inevitable outcome of man's cowardice when face to face with his prejudices and his ignorance.

And now one final word.

The great work of delivery will never be accomplished without steadfast and unselfish service on the part of a small hand of chosen pioneers.

Some of my readers may even suspect that I want them to be among the leaders whose praises are sung within the pages of this volume.

Their suspicions would be correct.

For that, on the whole, is why I wrote the present book.

H.v.L.

Veere. August 31, 1928.

第一章　人——发明者

Chapter 1　Man the Inventor

大约在四十六亿年前，地球从太阳星云中分离出来，成为了宇宙间一个天体。一系列的故事将由此发生，这些故事将与今日的你我息息相关。

炽热的地壳开始冷却，生命如雨点一般打破了这个星球的平静。植物在海洋中飘摇，各种甲壳动物也在摸索着移动。留恋海洋的动物将成为鱼的祖先；向往天空并飞上天的动物将成为今日的莺莺燕燕；还有另一些动物，它们拖着庞大的身躯，在湿润的沼泽中踟蹰，这就是恐龙。历史上曾经铭记下一个恐龙的时代。这些大腹便便、脑袋却小得很的怪物占据了水域、陆地和天空。但是，曾经不可一世的恐龙，现在只沦落为自然历史博物馆中的一具具骨架。恐龙灭绝的原因是惹人好奇的，也是耐人寻味的。或许，过于庞大的体型使得它行动迟缓，当气候发生变化，恐龙的乐园——沼泽也逐渐为海洋和干燥的大陆所取代。这些巨兽有限的智商不能想出应对之策，从而只得悲哀地目睹自己逐渐式微与灭亡。

归咎于天并不是唯一的解决之道。没有准备的人将会随波逐流，而有准备的人则将急流勇进。人类的祖先正是在气候变化后，攫得了发展的时机。

当人的始祖在地球上出现时，看起来更像是猩猩狒狒之流，依然以匍匐于地的姿态一代接一代地生存着。

那时地球上气候温暖，茂密的森林郁郁葱葱，类人猿群落生活在树林中，敏捷地跳跃穿梭，以此来保护自己。这种类人猿可能会像恐龙一样成为世界的霸主。但是，命运看来有了别样安排。他将成为霸主，不过是另

一种类型的。

约一千万年前，气候变化了，干燥和寒冷的气息开始侵入类人猿的家园。森林逐渐消退，山脉隆起。现在，生存不像以往那么容易了。类人猿面临着严峻的挑战。他们开始应战了，凭借的是——大脑。

发明开始了。而这种发明与普通动物的发明是有着天壤之别的。普通动物的发明是单一的，而且如果条件允许的话，也是长久不变的；一旦有足够食物和生存条件，它们更乐意什么也不去发明。人的发明则不同，人已经认识到了吃喝不是生存的全部，还需要关注更高层次的东西。他需要闲暇，来创造出更多的“发明”。这将使人的潜能不断地被开发出来，人也由此不断地提升和完善着自己。

心灵手巧的类人猿面对气候的变化，开始开动脑筋。他用后肢站立，将前爪解放出来，开始承担一些更有难度的动作。他的手日益灵活，眼观四路，耳听八方。他成为了与他的动物兄弟们不一样的存在，并且，将成为地球上的主人。

穷则思变。当环境步步紧逼时，改变自身以适应是有必要的。此时，气候又开始变换表情。严寒降临，冰川覆盖了大地。人类又面临着新一轮的挑战，要么坐以待毙，要么起而行动。人接受了自然的挑战，堂堂正正地站出来，睥睨着对手。他将经历磨炼，这使他更强壮，也更有智慧。人的力量在应战中展现出来，并将为自己创造一个不一般的世界了。

One fine day a small speck of dust (it weighed only 6,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000 tons, which is very little as such luminaries go)wandered forth from its ancient mother, the Sun, and set up in business for itself.

The event did not cause much of a stir in Heaven, for the new recruit for stellar honors was so hopelessly insignificant that none of the older stars, which rived in a distant and more respectable part of the universe, were able to notice the arrival of their little brother, unless their inhabitants (as seems hardly likely) were possessed of better telescopes than those which to-day stand in our own observatories.

But perhaps we had better not inquire too closely into the more humiliating aspects of the case, for when all is said and done we are all of us

prisoners on this tiny round ball And, whether we like it or not, that little planet is our home and will probably continue to be our home for a good long time.

I do not, mean to imply that we shall never be able to venture forth into space and pay an occasional visit to other parts of the firmament. But it is doubtful whether any of the other planets would lend themselves for the purpose of permanent settlement by denizens of the earth. For either they are altogether uninhabitable (as most of the planets of our solar system seem to be) or if they have developed a life of their own, it must be much older than that which exists on our own floating prison and we should be very much out of place in a country which had started to learn the rudiments of civilization one or two million years before ourselves.

And that reminds me of something that has puzzled me for a long time.

Why are people so tremendously interested in detective stories?

"It is the mystery that attracts them," is the usual answer, or "It is the fascination of watching a single vague clew develop into an iron chain of incontrovertible evidence."

For all I know, that may be the true reason. But in that case I wonder why more of them don't take up the study of geology, for the story of our planet is one endless series of the most magnificent riddles and only a few of them have thus far been solved. The others obstinately refuse to divulge their secrets, but in all fairness to them it should be said that there is not a single one among all these various puzzles to which there is not a key.

The people of ancient times knew this and they forced the rocks and the plains which were their home to tell them a great many things about their origin and their early past, which were of tremendous importance. But their successors, the humble folk of the Middle Ages, although they were great heroes on the field of battle, were terrible cowards within the Realm of Reason. They asked no questions, but meekly accepted what they were told out of an old book, and curiosity about the planet on which they lived was regarded as nothing less than sacrilege.

To-day the Middle Ages have been relegated to the museum of historical curiosities. Another ten or twenty thousand years and the little crust on which we crawl around with such energy will hold no more mysteries than an aspirin

tablet or a pumpkinpie.

It may seem that I am a little too generous with my thousands and hundreds of thousands of years, and juggle a bit too freely with the centuries. But that can hardly be helped in these days when fresh prehistoric discoveries have almost quadrupled the period during which we can speak of "history" in the accepted sense of the word as a "continuous methodical record of past events." Besides, such a feeling of the vast duration of the existence of all the things with which we are familiar is very good for the soul and teaches us humility and patience. When we begin to realize that it took our ancestors something like 500,000 years to learn to walk on their hind legs, we feel a little more tolerant towards our own contemporaries when they fail to solve some important problem in less time than we think they ought to take and we get a better slant upon ourselves. We cease to be so terribly important. We become mere upstarts—creatures which did not make their appearance upon the surface of the planet until millions and millions of years after the majority of the other arrivals—rulers of the universe who only day before yesterday were admitted through the front gate.

As for the different steps which nature took to arrive at this fine conclusion-on-two-feet, we are still ignorant about many of the details, but in a general way we have at least a suspicion of how it came about.

It all began as soon as the outer crust of our planet had sufficiently cooled to support some sort of life. It was rapidly populated by an endless variety of plants and by multitudes of armor-clad, sightless creatures which spent their entire existence in the water and were the undisputed masters of the earth.

We know that some of them remained faithful to the sea and became the ancestors of the fishes upon which we feed to-day; that others developed wings and took to the air and became the grandparents of our modern birds. We have discovered that others, which belonged to the same family as the lizards and serpents of our own day, came to such great estate that for a long while it looked as if our planet was to be permanently dominated by reptiles. For the climate of that period (and please try to think in terms of millions of years and forget all about the dates in your history book, which represents only a couple of seconds in the calendar of eternity)—the moist, damp climate of that period