ISAAC
THE ALCHEMIST
Secrets of Isaac Newton, Reveal'd
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CANDLEWICK PRESS
Alchemy: Any seemingly magical power or process of transmuting.*

See synonyms at Magic. [Middle English alkamie, from Old French alquemie, from Medieval Latin alchymia, from Arabic al-kimiya, “the art of transmutation.”

*Transmute: To change from one form, nature, substance, or state into another; transform.
In a museum in New York City, locked away where the public never goes, there's a notebook small enough to hold in the palm of your hand. Its pages are yellowed and stained with time, but the writing has not faded.

The boy who owned it was small for his age. He had pale red-gold hair and blue eyes that bulged slightly. His name was Isaac.

"A secret for travellers," he wrote in his notebook, "[a] miraculus stone." So perhaps he knew even then about the philosopher's stone, which was said to turn ordinary metal into shining gold. The magician-scientists known as alchemists were searching for it.

If they could discover the philosopher's stone, the alchemists thought, not only could they change lead into gold. They could also make an elixir that would cure any disease. They could live forever.

Someday, though he didn't know it yet, Isaac would begin searching for the magic hidden in old and musty books of alchemy. He would stand
over cauldrons, adding secret ingredients and watching as poisonous vapors rose and swirled.

He would become the world's greatest alchemist.

He would also (by following his own odd and lonely path) become one of the greatest scientists who ever lived.

His discoveries about light and how objects move through space would unlock the mysteries of the universe, and the name Isaac Newton would be famous forever. Far in the future, scientists would use Isaac's laws of motion—which are the foundation of the science we now call physics—to send rockets to the moon and beyond.

But for now, he was only a boy living at a time when no one knew where magic ended and science began. He dipped his quill pen in an inkpot and wrote in his notebook, thinking hard.
Chapter One

The Apothecary’s House

When the last candle had been snuffed and every house in Grantham was dark, the night watchman made his rounds. His lantern shone on crooked alleyways and narrow stone houses and timbered taverns held together with wooden pegs. On High Street, his light glinted on the windows of an apothecary’s shop.

In the rooms above the shop, the apothecary and his family were sleeping. High in the attic, a boy named Isaac was sleeping, too. He was twelve years old and lived as a boarder in the apothecary’s house.

Deep in the cellar, the apothecary’s workshop was dark and silent, but Isaac could go there whenever he wanted. If you liked mysteries (and Isaac did), it was a fine thing to live right above an apothecary’s workshop.
Apothecaries in those days made their own medicines, often from secret recipes. They made potions and elixirs, grinding herbs in their brass pestles and adding witchy-sounding ingredients such as dried toads or dew collected first thing on a May morning. In an apothecary’s workshop, you could see furnaces where cauldrons steamed and bubbled. Sometimes the liquid in them changed color or exploded with a cloud of smoke.

It was like magic.

It was also very much like alchemy.

As he slept that night in the apothecary’s house, Isaac was not yet an alchemist and would not be for many years. But already, the seeds of magic had been planted in his mind.

Isaac was a quiet boy, born on Christmas Day in the year 1642. He’d been a tiny baby, so small that no one expected him to live. He’d taken his first breath under a round moon a little past midnight in the upstairs bedroom of an old, rather run-down farmhouse.
The house had a grand name, Woolsthorpe Manor, but none of the castle-like splendor the word *manor* calls to mind. Mice scurried down the halls and wooden staircases and across the cold stone floors.

His life began in loneliness. Isaac’s father had died that fall, before Isaac was born. So he never knew his father, and his mother didn’t seem to love him very much.

When Isaac was three, she married an old, rich minister named Barnabas Smith. Their marriage agreement stated that Isaac could not live with them—Barnabas Smith had no use for a tiny stepson. So Isaac’s mother moved away, leaving Isaac behind.
Isaac’s grandmother came to live with him in the farmhouse, but she was always busy. She and the servant girls* bent over iron pots that hung from hooks in the fireplace, cooking meals for the farmworkers. She looked after chickens and geese and collected eggs; she milked cows and made butter and cheese in the farmhouse cellar. So it is no wonder that Isaac’s grandmother, like his mother, seems to have had little time for Isaac.

All his life, Isaac would search for the answers to questions, but there in the farmhouse, he was faced with a mystery no three-year-old could solve—if his mother really loved him, why did she leave him behind?

Far in the future, a child’s drawings would be found scratched in the farmhouse’s soft stone walls: a windmill, a church, a figure with a spurred boot. It was clear the child who drew them was bright and imaginative. The pictures had been hidden by layers of plaster for many years. The people who found them wondered if the drawings had been made by Isaac. It was easy to imagine him scratching away, unnoticed by anybody in the busy household.

The windmill in particular seemed like the kind of drawing Isaac would make, for

* In the England of those times, even modest households had servants.
windmills were among the many things that he observed with great interest.

When Isaac was old enough, he walked to a village school, held in someone’s cottage, where children were taught to read and write but nothing more.

At home, upstairs in his room at the farmhouse, he watched sunlight. He noticed how shadows shifted across the whitewashed walls as the sun moved. He stretched pieces of string from wooden pegs to mark how, hour by hour, the angle of the shadows changed.

He began making sundials of many different kinds. People called them “Isaac’s dials,” and after a while they noticed them all over the farmhouse, wherever the sun shone in.

Already, his mind seemed different from other people’s minds.

Isaac’s mother and Barnabas Smith had three young children: Mary, Benjamin, and Hannah. Their home, Barnabas Smith’s parsonage, was only a short walk from the farmhouse. But Isaac couldn’t come live with them—because Barnabas Smith would not allow it.

Sometimes Isaac wished his stepfather were dead.

He remembered it years later when he was making a list of things he had done that he considered sins: “Wishing death and hoping it to some,” Isaac wrote. “Threatning my father and mother Smith to burne them and the house over them.”
They were terrible thoughts: the flames rising, roaring, the house consumed in fire . . .

Wishing death and hoping it to some.

And then, when Isaac was ten, his stepfather did die.

In his will, Barnabas Smith did not mention Isaac. The old man left most of his money to his “only sonne,” Benjamin.

Now that his stepfather was dead, Isaac could live with his mother again. She moved back to the farmhouse, bringing her new family with her. Mary was four, Benjamin was a toddler, and Hannah was still a baby.

What that was like for Isaac—whether he still, at times, thought of burning the house down over his mother’s head—no one will ever know. But in any case, his time with her didn’t last.

When he was twelve, she sent him away to school in Grantham, to live in the apothecary’s house with another family to which he would never really belong.

The apothecary’s house was eight miles from home, a long walk if you didn’t have a horse or money to ride the stagecoach. No one knows if Isaac went home much.

Maybe he didn’t want to.

At night before he fell asleep in the apothecary’s attic, maybe he thought of home.

And maybe he didn’t.
THE
MYSTERYES OF
NATURR, AND ART:
Contained in foure
severall Tretises. The first is of water
Workes. The second of Eyre workes,
The third of Drawinge, Colouringe,
Paintinge, and Engravinge. The
fourth of divers Experiments, as well
serviceable as delightful: partly
Collected, and partly of the Authors
Peculiar Practice, and
Invention
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J. B.

Imprinted at London for Ralph Mab and are to be sold by John Tackton
and Francis Church at the Kings arms in Cheapside. 1634.
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Mary Losure