

## #INSIGHT

### The Origin of the Metric System

After the revolution of 1789, French citizens sought uniform weights and measures throughout the nation



**M**etric System Day is an annual celebration of a nearly-universal system of 'measurement.' This system uses standardized units like meters, kilograms, and liters. In most of the world, the metric system is the global standard. It's perfect for simplifying and unifying measurements across the world.

However, a few countries still hold out and use alternate measuring systems. The largest countries, that don't use it, are the United States, Liberia, and Myanmar, although there are efforts and partial adoptions in these countries.

The beginnings of the metric system go back to 1586, when a Flemish scientist and mathematician called Simon Stevin published his pamphlet entitled 'De Thiende' (The Tenth).

In the publication, Stevin emphasized the importance of decimal-based measurement. He probably didn't realize it then, but he had laid the first bricks in the foundation of the metric system. However, it wasn't until over two centuries later that Stevin's vision began to materialize.

After the revolution of 1789, French citizens sought uniform weights and measures throughout the nation. The National Assembly and subsequent national governments commissioned the Paris Academy of Sciences and its successor, the Institute of France, to develop entirely new units, to measure distance, volume, weight, angles and even time. The units were interrelated.

Units of one measure, such as length, was increased by powers of ten (millimetres, centimetres, decimetres, metres). A litre was the volume of a cube 10 centimetres on a side. A litre of water, at a standard temperature, weighed one kilogram. No such simple relations existed in standard units of weight and measure among units of

length (inches, feet, yards, miles) or among units of length, volume and weight. In other words, the French introduced not only national standards, but a system of standards. It survives today as the 'metric system.'

In 1790, after the terror of the French Revolution and with the rise of Napoleon Bonaparte, the French government officially adopted the metric system. Napoleon recognized the benefits of a standardized measurement system across his always-expanding empire.

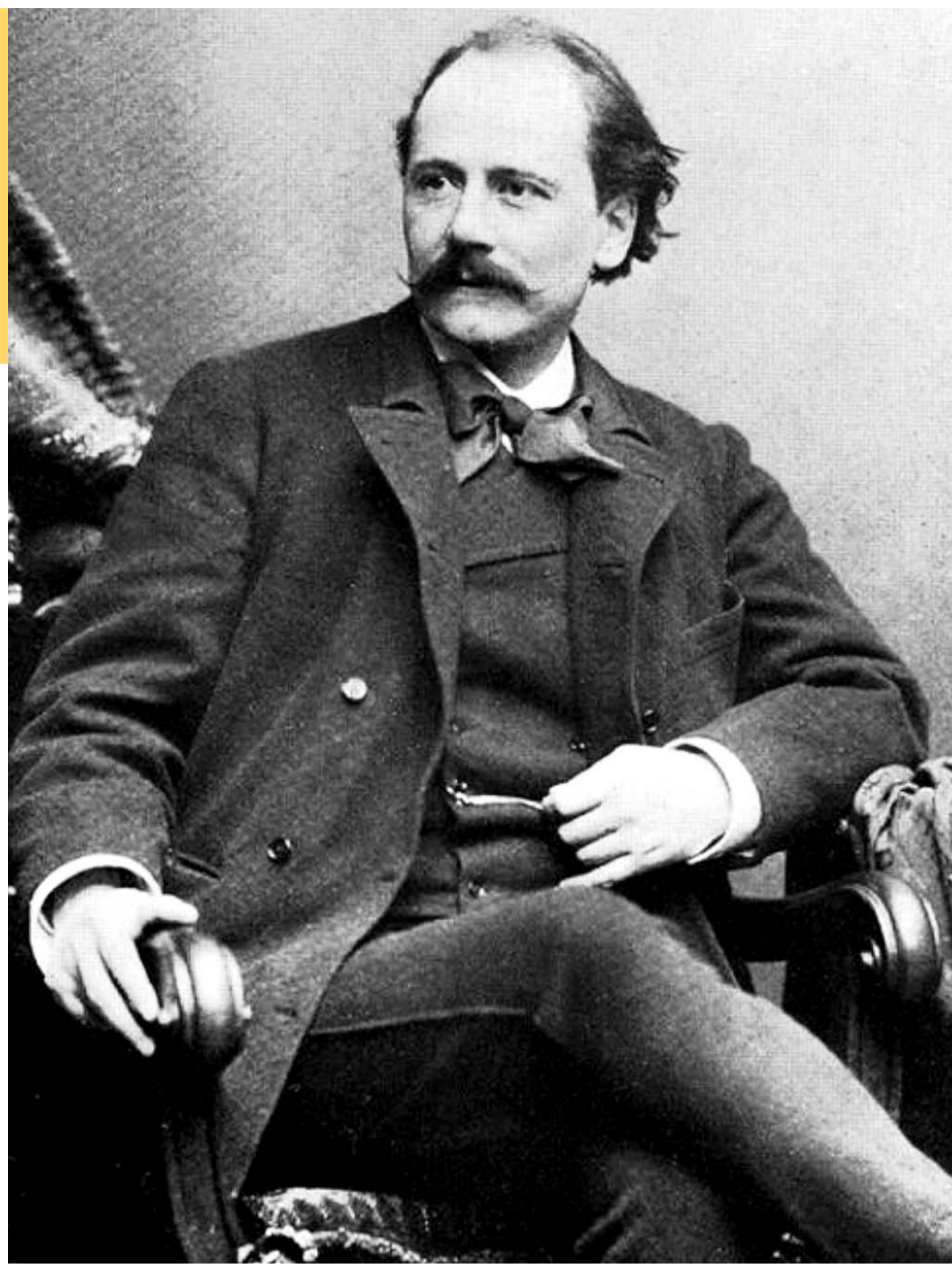
As a result, he introduced it to the territories that he conquered. Despite initial resistance, and even a short period of abandonment after Napoleon's defeat at Waterloo, the metric system gradually regained its traction across Europe. By the mid-19th century, countries like the Netherlands, Italy and the German Empire had adopted the metric system. Between 1875 and 1914, the period saw that these measurements were put into place by several other nations, including Brazil, Spain, Portugal, and Mexico.

Interestingly, the United States allowed the use of the metric system for commercial purposes as early as 1866, demonstrating its growing international influence. Still, Americans have not accepted its widespread use, still preferring the Imperial measurement system.

The evolution of the metric system continued into the 20th century, with the establishment of the International System of Units (SI) in 1960 by the International Institute of Metrology.

This updated version of the metric system further standardized measurements and included units such as Kelvin for temperature.

Because of the metric system's adaptability to scientific and engineering work, the adoption of the system flourished with the rapid expansion of the industrialized world.



Jules Massenet | Musical Memories by Camille Saint-Saens/Wikimedia Commons [Public Domain].

## Ajay Kamalakaran

In the spring of 1877, the Parisian intelligentsia hummed with rumours about an upcoming spectacle at the Grand Opera. Some said it was the myth of *Orpheus* set in India. Others claimed, no, it was an adaptation of the Sanskrit epic, *Mahabharata*. The buzz was heavy amid growing European interest in Sanskrit and Indian religions and philosophy. Thanks to the works of Indologists like Max Müller, tickets sold quickly and, in the last week of April, Jules Massenet's *Le Roi de Lahore* (The King of Lahore) premiered, becoming one of the most talked about events in the French and international press.

"It is impossible to do justice to a 'grand opera' in five acts, after a single hearing," the *Chicago Tribune* said. In May 1877, adding that the opera's libretto was written by Massenet's friend, the writer, Louis Gallet. "He (Massenet) has hit upon a charming subject, not only interesting, but thoroughly new."

The British daily, *The Standard*, carried a dispatch a day after the premiere, that was generous and effusive in its praise. "The ballet surpasses anything of the kind ever witnessed, even at the French opera," it said. "The costumes are simply models of taste, brilliancy and beauty."

Another British newspaper, *The Era*, which sent a correspondent for the grand opening, took a more nuanced view. "To say that the *Roi de Lahore* is a work of the

first order, or to launch into enthusiasm about its merits, would be exaggeration, but its score contains some delightful colour, and is written in fine dramatic style. But if anyone goes to the opera under the hope that his ear will be charmed by some brilliant morceau, that he will carry away with him one of those 'catching melodies' that imprint themselves unbidden on the memory, or that his mind will be impressed by some imposing scene, he will find himself deceived." Whether praiseful or disapproving, what most critics didn't realise, out of their ignorance about India, was that the opera took some leeway as a work of fantasy.

## Dramatis personae

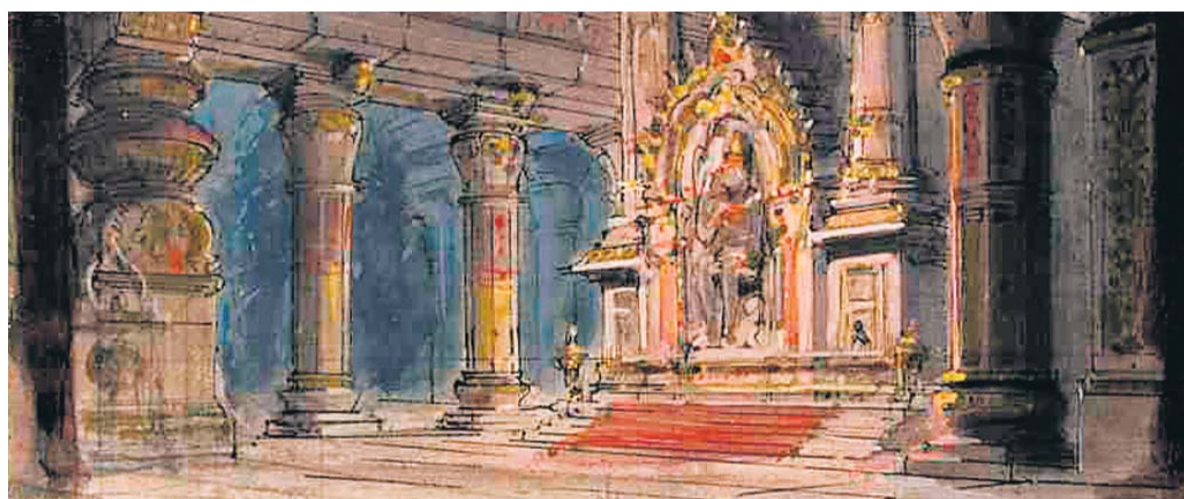
The opera was set in 11th-century Lahore, when it was on the verge of an invasion by Mahmud of Ghazni. The main protagonist, a devotee of the god *Indra*, is named *Alim*, the villain *Scindia* (seven centuries before the house of the *Gwalior royal family* was founded), and the high priest of the *Indra* temple has the name *Timur*.

If the names sound perplexing, it should come as no surprise. The libretto was based on a story that originated in India and was modified as it travelled West. It is probable that Gallet could not even tell the difference between Hindu and Muslim-sounding names.

In the opera, the temple of *Indra* has a charming priestess, *Sita*, who is courted by both King *Alim*, and his minister *Scindia*.

The priestess, however, loves *Alim* and at night, he secretly enters the temple to be with her. A bitter *Scindia* gets his own back when Mahmud of Ghazni invades

## #FANTASY



Set design by Philippe Chaperon for 'Le roi de Lahore', 1877. Credit: Gallica Digital Library/Wikimedia Commons [Public Domain].

*Hindustan*. *Scindia* gets the troops to revolt against *Alim* and then murders the king.

When *Alim*'s soul goes to *Mount Meru*, he requests *Indra* to let him return to Lahore in human form. *Indra* grants him his wish. He is allowed back into the physical realm but on the condition that his life will last only as long as *Sita*'s. By the time *Alim* gets back, *Scindia* is the king of Lahore and he has forced *Sita* to be his wife. Disguised as a common man, *Alim* goes to *Indra*'s temple for *Sita*, who at first thinks it is a vision but realises that he is there in flesh and blood. Just when the couple are united, *Scindia* turns up and bursts into a jealous rage, threatening both of them. In the end, *Sita* stabs herself and *Alim*

critics, who attended the premiere, were impressed by the performances. "Lassalle creates the role of *Scindia* with the consummate authority of a great artist," *The Era* wrote. "His fine voice, excellent diction and deep sentiment justify once more, in this instance, the legitimate reputation that he has acquired." *The Era* also liked *Solomon* and *de Reszke*, whose acting and singing, it said, were "beyond praise."

The audiences, the critics were left impressed by the sets, which were designed and painted by the renowned Philippe Chaperon. The *Era* reporter was clearly awestruck by them when he wrote,

"The third act introduces us to the *Paradise of Indra*, a radiant vision of a celestial garden, brilliant with light, overgrown with gigantic plants and a profusion of gaudy-coloured flowers, a paradise such as it was known to the imagination of the ancient East. At the back of the stage rises the mountain of gold and precious stones of *Meru*. *Indra* seated in the state, on an eminence, presides over the festivities of his court. *Aspasas* are dancing and the whole stage is crowded with *hoursis*, clothed and unclothed in every form and colour of Eastern magnificence and luxury, a truly marvellous scene, one of those gems of 'stage decoration' to which no words can do adequate justice." The successful premiere set the stage for Massenet's ascent as France's most celebrated operatic composer. Before the staging of *Le Roi de Lahore*, he was a moderate success. An unknown outsider France, he had to depend mainly on his teaching income. But after the opera, which took several years to finalise, there was no looking back.

## Critical success

For their part, Parisians enjoyed the sets that were some sort of 'European fantasy' of India. The cast too was mostly European. *Sita* was played by Polish soprano Josephine de Reszke, *Alim* by tenor Marius Solomon, *Scindia* by baritone Jean Lassalle, and *Indra* by bass singer Georges François Menu.

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London and the United States. Massenet died at the age of 70 in 1912, and is best remembered for his operas *Werther* and *Manon*. *Le Roi de Lahore*, his other triumph, would continue to be staged for another decade, making its debut in New York City in January 1924. Before the Big Apple performance, a *newswire* report appeared in the *Tampa Tribune*, estimating the production cost at a staggering \$80,000. "What made the cost this high was the 'striking ensembles,' 'elaborate costuming' and 'brilliant spectacle of the *Hindu* paradise,'" the wire report said.

The sets in New York were designed and painted by an artist of great repute, who was born in present-day Moldova. "For the premier production of this opera in New York, Boris Anisfeld, the Russian painter, devoted most of the summer," the report said. "He is responsible for the designs, painting of the scenery and the costume designing, which will be among the most elaborate, seen at the Metropolitan Opera House, this season." The opera was initially well-received in New York, but interest in it waned over in the 1920s. It was revived in Italy in the 2000s. And in 2023, it made a comeback in Britain at the 2023 Dorset Opera Festival, where *Alim* was played by Bombay-born Amar Muchhala. It may take a while before a largely South Asian cast performs a French opera, set in 11th-century Lahore, but Jules Massenet's bold 19th-century attempt at an *Indo-French fantasy opera* will continue to reach out to new audiences.

With critical acclaim, *Le Roi de Lahore* began touring. It was staged in Venice, Bologna and Rome in Italy, where it was clearly in high demand, as well as in

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## Geologists' Day

For many people, geology could be considered an underappreciated science. This may be especially true when it is compared to other sciences such as physics, biology or chemistry. However, if the human race didn't have geologists, then we wouldn't know how the earth was formed! *Geologists' Day* dedicates the time towards thanking them for all the research that they do to help further understand how our world works. Not only that, but this day also seeks to learn about historical geologists who have helped people understand our world 'better' and even possibly 'inspire' some people to become geologists themselves!

## #WELLNESS

### 4 Surprising Things That Happen When You Eat More Fibre

Fibre impacts nutrient absorption, hormones, and serves as food for our good gut microbes, leading to a variety of surprising health benefits.



We know fibre is good for us, but an astounding 90 per cent of women and 97 per cent of men are falling short on their recommended fibre intakes. While fibre, a type of carbohydrate that our bodies cannot fully break down, found naturally in fruits, vegetables, whole grains,

beans, legumes, nuts, and seeds, is widely recognized for its ability to improve digestion, the benefits of eating more fibre are not limited to our gastrointestinal (GI) tract. Fibre impacts nutrient absorption, hormones, and serves as food for our good gut microbes, leading to a variety of surprising health benefits.

#### Here are 4 lesser-known health effects of eating more fibre



#### 2. Your LDL cholesterol may go down

Low-density lipoprotein, or 'LDL' cholesterol is often referred to as the 'bad cholesterol.' This is because having high levels in your blood increases your risk for developing cardiovascular disease. When it comes to lowering your LDL, high-fibre foods are some of the best that you can eat, as certain fibres are particularly adept at helping to lower cholesterol levels.

*Soluble fibre* is a type of fibre that forms a viscous gel in the GI tract, binding with cholesterol so that its excreted rather than absorbed. This gel also binds to bile acids that our bodies produce from our own cholesterol to help break down foods that we eat. Normally, we absorb bile acids in our intestine so that they can be recycled. When soluble fibre binds with them, however, they can't be reabsorbed. Instead, we



make more bile acids out of our own cholesterol, lowering blood cholesterol, as a result.

You can find soluble fibre in the fleshy parts of fruits and vegetables, the inner portion of beans and legumes, and in certain nuts, seeds, and grains. Some of the highest sources of cholesterol-lowering soluble fibre include foods like chia seeds, lentils, oats, oat bran, barley, apples, bananas, and potatoes.

#### 1. Your energy levels may become more stable throughout the day

If you've ever felt shaky, fatigued, hungry, or lightheaded an hour or so after eating a carb-heavy meal, a lack of fibre may be partially to blame. When we eat foods that contain carbohydrates, they're broken down into sugar, which enters the bloodstream and raises blood sugar levels. In response to our rising blood sugar, the hormone insulin is released.

Insulin acts like a key, allowing sugar to enter our body's cells to either be used for energy or stored for later. Blood sugar levels drop once the sugar enters our body's cells, which may lead to those unpleasant symptoms of hypoglycemia. While some degree of blood sugar fluctuation throughout the day is perfectly normal and healthy, large spikes and dips can leave you feeling lousy and increase your risk for developing metabolic issues down the road, like insulin resistance or diabetes.

When it comes to blood sugar stability, fibre is your best friend. It slows the absorption of glucose into the bloodstream, helping to prevent large spikes and subsequent crashes. Think of and consume beans and legumes, vegetables, fruits like berries and apples, and whole grains like quinoa and barley.

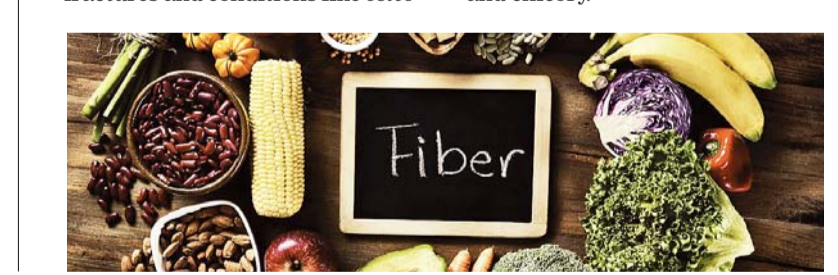
#### 3. You may lower your blood pressure

High blood pressure increases your risk for developing heart disease and stroke, and it's more common than you may think. Eating fibre-rich foods can help to lower your cholesterol, which may lead to improved *vasodilation*. This

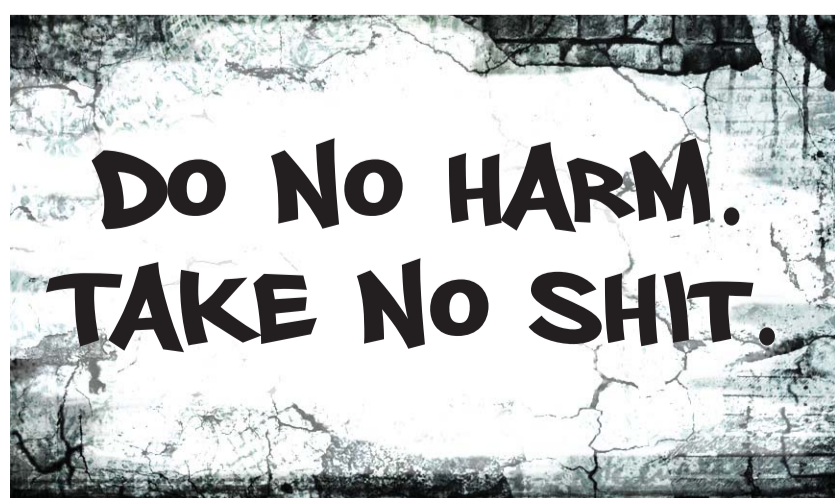
means blood vessels are better able to expand, causing blood pressure to decrease. Additionally, higher fibre intakes are associated with improved metabolic health, which is also linked to lower blood pressure.

#### 4. Your bone density may improve

Bone health may not be the first thing that comes to mind when you think of fibre, but recent research shows that certain fibres can actually improve our calcium absorption. Since over 99 per cent of calcium in the body is found in our bones, regularly consuming foods, rich in these fibres, may improve bone density over time. This means reduced risk for bone fractures and conditions like *osteoporosis* and *osteopenia*, down the line. Certain fibres have prebiotic properties, meaning that they feed our good gut bacteria, encouraging a healthy gut microbiome. The prebiotic fibres, most strongly associated with improved mineral absorption, are called *fructooligosaccharides* (FOS). You can find them in foods like asparagus, artichokes, garlic, onions, barley, and chictory.



## THE WALL

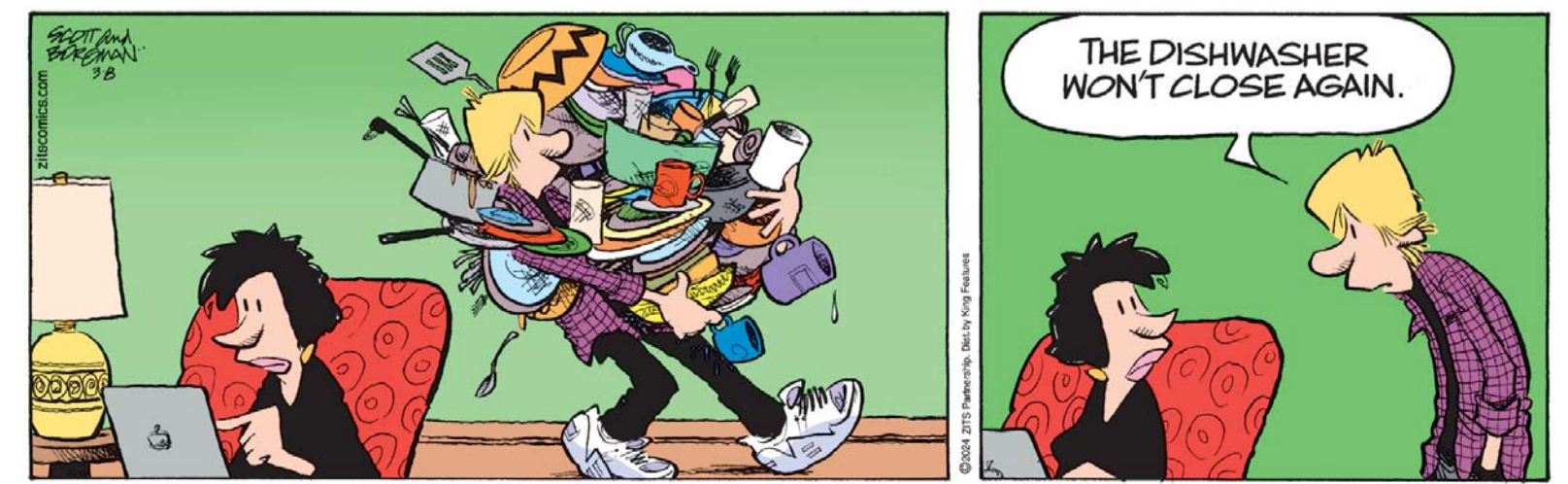


## BABY BLUES



By Rick Kirkman & Jerry Scott

## ZITS



By Jerry Scott & Jim Borgman

