

# THE THISTLE & FIG TALES®

WRITTEN BY: ALICE MARCUS KRIEG & CARMEN DEVITO • ILLUSTRATED BY GIDEON



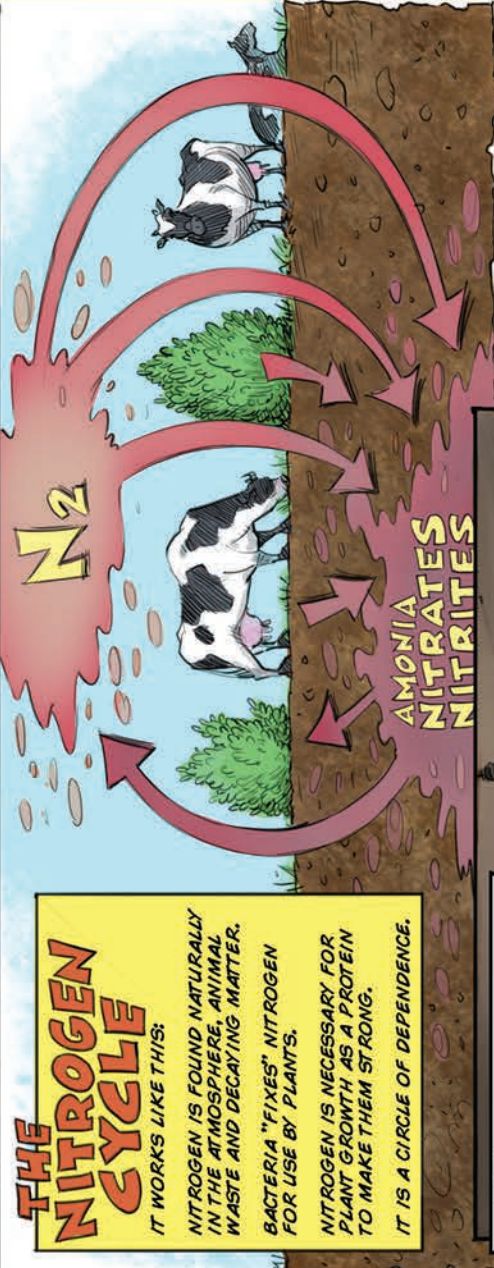
BIRD AND BAT POOP CAN ONLY GO SO FAR...

YEAH GERMANY, GREAT IDEA TO DEPEND UPON A NITROGEN SOURCE THAT'S 7700 MILES AWAY.

GOOD POLITICS FOR FEEDING YOUR PEOPLE.



LEADING UP TO WWI, FOR POLITICAL REASONS, ENGLAND CUTS OFF SUPPLIES OF SALT PETER TO GERMANY.

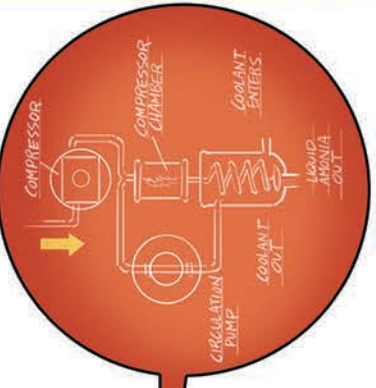


## THE NITROGEN CYCLE

IT WORKS LIKE THIS:  
NITROGEN IS FOUND NATURALLY IN THE ATMOSPHERE, ANIMAL WASTE AND DECAYING MATTER. BACTERIA "FIXES" NITROGEN FOR USE BY PLANTS. NITROGEN IS NECESSARY FOR PLANT GROWTH AS A PROTEIN TO MAKE THEM STRONG. IT IS A CIRCLE OF DEPENDENCE.



IN 1908, CHEMIST FRITZ HABER DEVELOPS A HIGH PRESSURE PROCESS FOR MANUFACTURING NITROGEN THROUGH THE COMBINATION OF AMONIA AND HYDROGEN.



FARMING WITH MANUFACTURED NITROGEN IS NOW POSSIBLE WITH THE INVENTION OF SYNTHETIC FERTILIZER...

FARMING IS TRANSFORMED AND THOUSANDS OF LIVES ARE SAVED.



IT REMINDS US ABOUT THE ORIGINS OF SYNTHETIC FERTILIZER AND IT'S SINISTER PAST...

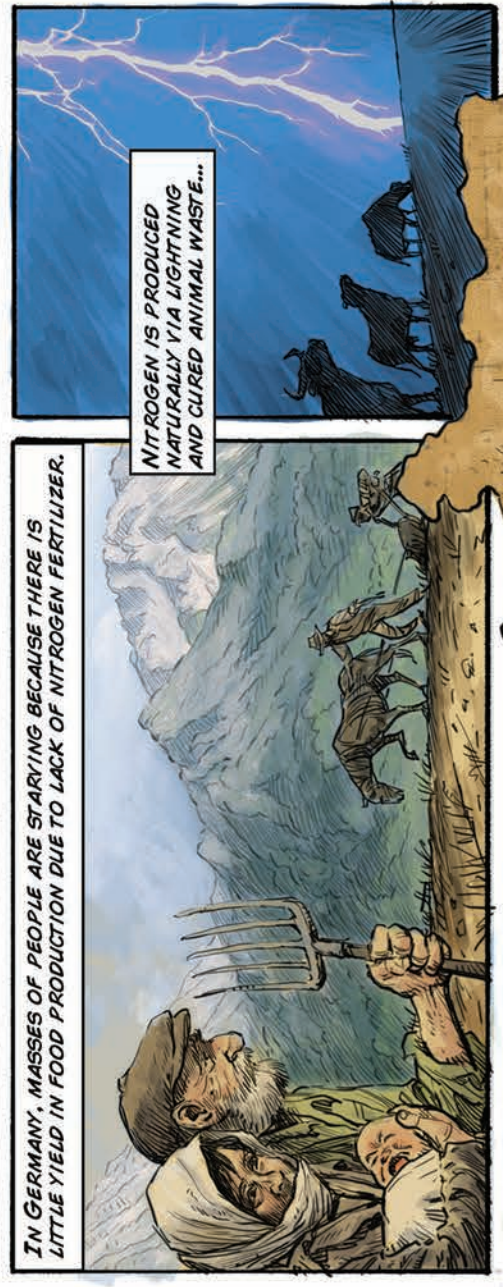
AS GARDEN DESIGNERS, THISTLE & FIG ARE OFTEN ASKED ABOUT FERTILIZER: WHEN TO APPLY, HOW MUCH, WHAT TYPE ETC...

## THE ORIGIN OF... FERTILIZER

STORY BY THISTLE & FIG - ART BY GIDEON

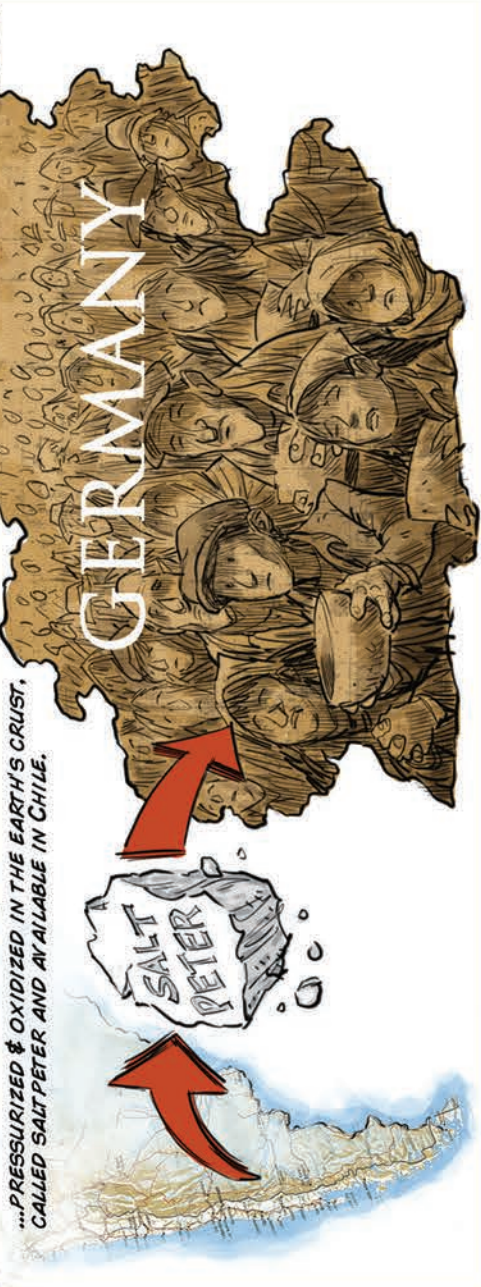


AT THE TURN OF THE 19TH CENTURY, BRITISH CHEMIST SIR WILLIAM CROOKES DELIVERS A LECTURE TITLED "THE WHEAT PROBLEM" ADDRESSING THE LACK OF FOOD AVAILABLE IN EUROPE DUE TO OVER-FARMED FIELDS AND POPULATION GROWTH.



IN GERMANY, MASSES OF PEOPLE ARE STARVING BECAUSE THERE IS LITTLE YIELD IN FOOD PRODUCTION DUE TO LACK OF NITROGEN FERTILIZER.

NITROGEN IS PRODUCED NATURALLY VIA LIGHTNING AND CURED ANIMAL WASTE...



...PRESSURIZED & OXIDIZED IN THE EARTH'S CRUST, CALLED SALT PETER AND AVAILABLE IN CHILE.

# GERMANY

SALT PETER

# THE WHISTLE & FIG TALES®

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1933 - HITLER BANISHES HABER FROM GERMANY BECAUSE HE IS OF JEWISH HERITAGE, EVEN THOUGH HE CONVERTED TO CHRISTIANITY AS A YOUNG MAN.



HABER'S WIFE COMMITS SUICIDE ...

...AND HABER DIES ALONE IN PARIS.



HABER'S INVENTION ALLOWS THOUSANDS TO LIVE AND CAUSED THOUSANDS TO DIE.

BUT SCIENCE HAS AND ALWAYS WILL GIVE US MANY OPTIONS. IT'S UP TO US AS HUMANS TO MAKE THE DAILY CHOICES...

...IN OUR GARDENS AND ON OUR PLATES.

FINIS!



FERTILIZER IS IN PRODUCTION THROUGHOUT GERMANY.



HABER WINS THE NOBEL PRIZE IN CHEMISTRY.



THE FIRST WORLD WAR BRINGS THESE PROMISING DEVELOPMENTS TO AN END.

A SECONDARY USE OF CHEMICAL FERTILIZER IS THAT IT CAN BE MADE INTO THE TOXIC AGENT MUSTARD GAS...

HABER, AN EMPLOYEE OF THE GERMAN WAR MACHINE, OVERSEES THE FIRST RELEASE OF MUSTARD GAS ON ENEMY SOLDIERS IN 1915.



MUSTARD GAS RELEASED INTO THE AIR...

KILLS THOUSANDS OF SOLDIERS VERY QUICKLY.



HABER'S INVENTION COMES TO HAUNT HIM.

HIS WIFE LEAVES HIM BECAUSE SHE IS OPPOSED TO HIS USE OF MUSTARD GAS AS A WEAPON OF MASS DESTRUCTION.

