

Scientist broke the code of the Tuberculosis bacterium

Scientists have broken the code of the tuberculosis bacterium, a germ that kills more people in the world than any other infectious agent.

The advance, which is being published today in the journal Nature, is the work of a team led by Dr. Stewart Cole, a tuberculosis expert at the Pasteur Institute in Paris, and Dr. Bart Barrell, a DNA sequencer at the Sanger Centre near Cambridge, England.

The team succeeded in decoding the 4,411,529 chemical letters that constitute the genome, or DNA sequence, of Mycobacterium tuberculosis, as the microbe is known.

Working out the structure of so enormous a DNA molecule lies at the edge of what is technically possible. About a dozen bacterial genomes have been sequenced since 1995, only one of them larger than that of tuberculosis.

This advance is likely to open new approaches for developing drugs and vaccines against the microbe, and to reinvestigate research efforts in what has been up to now a difficult and slow-moving field.

The success comes none too soon. Tuberculosis is a deadly disease in the less developed world, killing three million people a year, according to the World Health Organization.

In the United States, where it has long been treatable with antibiotics, public health officials were concerned when drug-resistant strains emerged several years ago that the

disease would become uncontrollable again.

The outbreak of these novel forms has been contained, but tuberculosis is no longer regarded with complacency.

The bacterium is inhaled and is usually contained within the lungs by the body's immune system. There it may lurk harmlessly for years, until the immune system is weakened by age, stress or disease.

Then the bacterium erupts, eating through the tissues of the lungs and occasional blood vessels, causing the patient to cough up alarming amount of blood.

Possession of the bacterium's DNA sequence is like acquiring an enemy's battle plan. The sequence encodes every genetic defense and stratagem the bacterium has acquired in the course of evolution.

Though full analysis of the sequence will take years, the Pasteur-Sanger Centre team has already discerned that the sequence encodes about 4,000 separate genes and has divined how some of them may assist the microbe at different stages of its life cycle.

About 400 of these genes, for example, belong to a previously recognized genetic family. Their purpose may be to help the bacterium change its outer coat, staying one step ahead of the attacks mounted against it by the body's immune system.

Another large set of genes is devoted to making fat-related chemi-

cals known as lipids. These may be the key to sealing the bacterium's membrane and letting it survive for years while it waits for a weak spot to emerge in the immune system.

Dr. Barry Bloom, a tuberculosis expert at the Albert Einstein College of Medicine in the Bronx, said the genome would have "a major effect in accelerating ongoing work in terms of identifying the genes required for virulence and targets for drugs and vaccines."

Dr. Lee Reichman, director of the National Tuberculosis Center in Newark, NJ said he hoped the genome would stimulate drug companies to devise less draconian ways of treating the disease than the present six months of intensive drug therapy.

Both Bloom and Reichman have been critical of the lack of public funding for the tuberculosis research and believe that availability of the genome will bring new zest to the field.

Barrell said the tuberculosis genome had proved particularly hard to sequence, in part because of the many regions in which the same string of chemical letters is repeated. These repetitive strings have the purpose of protecting the bacterium against its host's immune system.

Repetitive DNA confuses the machinery that translates genetic instructions into proteins. Since the repetitive regions seem to be in the genes for the bacterium's coat proteins, the effect is to change the com-

position of the coat at regular intervals.

The coat proteins are the target of the body's immune system, which is thrown into disarray each time the target shifts.

The tuberculosis strain that infects humans seems to have split away 10,000 years ago from the strain that infects cattle. Since that is about the time cattle were domesticated, the human disease can be seen as a consequence of that agricultural revolution.

Plans are under way to sequence the cattle version of tuberculosis, as well as another closely related bacterium, which causes human leprosy.

Third annual Huckleberry Harvest August 7 and 8
Fundraising event is in support of The Museum At Warm Springs and is tax deductible
Call 553-3331 for more information

The Museum At Warm Springs Calendar of Event for 1998

Changing Exhibit Schedule

July 11-September 28: "Quilts! Quilts! Quilts!"

Opening Reception July 11, 12 p.m.

October 2-December 28: "Traditional Baskets"

Opening Reception October 2, 6 p.m.

Living Traditions 1998 11 a.m. to 3 p.m.

July

3-5: Dry Creek Dancers

11-12: Stick Game

18-19: Root & Cornhusk bags

29-30: Traditional Foods

September

5-7: Craft Fair

August

1-2: Heritage Importance

8-9: Cedar Bark Baskets

8: Spirit Walker Dancers

15-16: Cedar Root Baskets

22-23: Quilts

29-30: Traditional Foods

Culture Classes 1998 Sign up now

July

13: Wingdress &

20: Leggings &

27: Moccasins

October

1, 8, 15, 22 & 29:

Mask Mkg

August

17 thru 21: Beadwork

September

8, 15, 22 & 29: Cedar Root Bkt

November

2 thru 6: Ribbon shirts

Come to The Museum At Warm Springs Third Annual Huckleberry Harvest

Our very own unique fundraising event!! August 7-8, 1998

The following activities are sponsored through a grant from the US West Foundation and are FREE to the public: July 17 @ 6 p.m.: Lillian Pitt, lecture & presentation on her art.

September 12 @ 2 p.m.: Ed Edmo, story-telling "Grandmother Chokecherry"

October 3 @ 2 p.m.: "Bridge of the Gods" Native American legend, a play by The Tears of Joy Theater.

November 7 @ 1 & 3 p.m.: Mary Dodds Schlick, author lecture (coincides with Traditional Baskets Exhibit)

December 11 @ 6 p.m.: Jane Kirkpatrick, author lecture/book signing.

Also made possible by US West: Free Days (free admission) to The Museum. Saturday, October 3, 1998, Friday, November 27, 1998 & Saturday, December 5, 1998.

For more information on this calendar of Events, please call (541) 553-3331. Keep the Culture alive! Become a member or give a gift of membership to The Museum At Warm Springs.

Grant applications accepted

The Central Oregon Regional Strategies Board is accepting grant applications for projects to be funded through the Rural Investment Fund. The Central Oregon Rural Investment Fund is intended to provide gap financing for economic and community development projects located in Crook, Deschutes or Jefferson County. Projects must support the goals and actions established by the Central Oregon Regional Strategies Board, leverage other funding sources to the maximum extent possible, and be completed no later than June 30, 1999. There is currently \$392,184 available in the Fund.

The deadline for submittal of Rural Investment Fund applications is 5

p.m., August 7, 1998. If you would like to receive an application packet or if you have questions regarding the program, please contact Kelly Elzner at the Central Oregon Intergovernmental Council at (541) 548-9544. An application workshop for more information on the grant program and tips on how to complete the grant application will be held at the following location and time: Grant Application Workshop; COIC, Redmond Office; 2363 SW Glacier Place; July 16, 1998 at 3:30 p.m.

The Rural Investment Fund program is funded by a grant from the Oregon State Lottery and administered by the Oregon Economic Development Department.

"Quilts, Quilts, Quilts," to open July 11 at Warm Springs Museum Exhibit Gallery

"Quilts, Quilts, Quilts" exhibit will open July 11 at the Museum at Warm Springs.

"Quilts, Quilts, Quilts," an exhibit featuring old quilts, new quilts, or show quilts, is the next show scheduled for July 11, 1998 through September 28, 1998 in the Museum at Warm Springs Exhibit Gallery.

The show will feature a number of Confederated Tribes of Warm

Springs quilts. The deadline for quilts to be turned in is June 22, 1998 but will be accepted until July 3, 1998.

The opening reception is scheduled for July 11, 1998 at 12:00 noon. There will be demonstrations in hand quilting, machine quilting, and tie quilting.

The public is invited to attend and for more information contact Eraina Palmer at the Museum 541-553-3331.

Mt View donates to Museum



Rob Fuller of Mt. View Hospital District hands a \$1,000 check donation to Dora Goudy of Museum At Warm Springs.

The Museum At Warm Springs welcomes Mountain View Hospital District as a Patron Member at the \$1,000 level in The Museum At Warm Springs Business Membership Program. Mountain View Hospital is one of the first businesses outside of Warm Springs to join The Museum At Warm Springs new Business Membership Program. Other Business Members include: The Samuel S. Johnson Foundation, Indian Head Casino, Warm Springs Forest Products Industries, Warm Springs Power Enterprises, and Dial-M Services to name a few.

The Museum At Warm Springs Business Program invites businesses to join from \$100 up to \$10,000+. Benefits vary upon the level of Membership and range from guided tours of The Museum, free use of The Museum At Warm Springs

Conference Room, discounts to Business Member employees who wish to join, discounts in Gift Shop, Free Admission Passes, invitations to the CEO or designated contact to The Museum At Warm Springs special events.

The Membership Program revenue provides tremendous support to the operating expenses of The Museum At Warm Springs. The Museum At Warm Springs is an education institution which shares Native American cultural information with people from throughout Oregon, the Nation, and the world.

If you are interested in joining The Museum At Warm Springs Membership Program, please call Dora Goudy, Development Officer, at 541/553-3331 for more information.

Spilyay I'nawa Mishk'aau

(Spilyay asks "What's Up?")

With our juvenile situation, do you feel the Tribes should utilize traditional Justice? (A Whipman)



Berni Jackson (17), "I would have to say yes and no. The way children misbehave at pow-wow's or any other traditional ceremony, shows they have no respect for their culture. That means they'll have lack of respect towards their tribe. A whipman would be good to make children sit down and learn. But in another case I think parents should be their own whipman. Without strict rules or obedience, children will grow-up controlling their parents and constantly getting in trouble. Besides, the rights kids have now-a-days, can get the whipman or anyone else in trouble, just by crying wolf!"



Anthony Brunoe (17), "With current juvenile problems, there needs to be a punishment for poor behavior. Younger children and teens are misbehaving simply because there are no consequences for their actions. I believe parents should be held responsible for their child's actions. A parent is not only supposed to feed, cloth, and protect a child, but teach them the difference between right and wrong. When a child constantly misbehaves, it shows lack of discipline at home. This also means the parent chooses not to discipline, and teach this child good behavior. Its a parents responsibility to teach good behavior. They need to set and enforce rules with consequences. In my opinion, having a whipman punish a child simply takes responsibility away from the parent."



Charles Tailfeathers Sr., "Yes I believe it should be utilized. I also believe we are making efforts at this point by utilizing the family court. Traditional justice has never left. It's still in the Tribal Law and Order Code under 201.015 where it states under section two (2), where necessary the court "shall apply the laws of the traditional customs and usage in general accepted by the tribes. Where there is doubt as to customs or traditional laws, the court should obtain advice from at least two tribal elders who are familiar with the customs and usage." I believe a whipman should be utilized only as a last resort and a whipman was used, he or she was given a gift. That's a decision that should be made by the family. I believe some of the options should be as the child needs to be dealt with in the traditional customs such as digging roots, chopping wood or assisting the elderly and maybe doing community service and so forth. If that doesn't work, then the family should get together and decide for that child what would be the next option. The efforts are being made here in Warm Springs but there still is a lot of work to be completed. We are slowly developing programs that hopefully can be utilized in the future by families. Due to the kid's behavior and their attitudes toward other people I think traditional justice should be utilized. Not only for the juvenile but as well as the family and the parents who have probably lost or forgotten the Indian way of life and justice."



Amanda Tom (16), "Yes because it would scare the little kids and it would make them sit down and behave."



Joe Thompson (15), "No, cause it didn't work that good for most people."



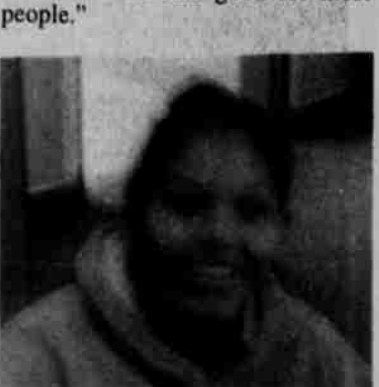
Tina Aguilar, "Yes. Because the way the court system is-you whip your child and chances are, you get charged with child abuse. Children, young people need to own up to their mistakes."

If the parents/guardians cannot discipline without fear then the court or whipman can take that responsibility.

But what really needs to be done is to bring God back into the family, everyday living & the system. The Bible tells us they use to stone the stubborn & rebellious son (child) (Deuteronomy 21:18 to 21) to death. Also you can read more in Proverbs 13:24; 19:18; 22:6 & 15; 23:13 & 14 and 29:15 & 17. God needs to be first in all we do."



Chesley Yahtin Sr., "Yes! In my day, we all answered to one man. There was one assigned to Simnasho district. They would take them and punish them according to how serious their problem was. Yeah, kids now-a-days are protected by the law. It makes a hardship for the family."



Marie Kalama (17), Yes I feel we should. If it worked in the old days it must have made the youth not wanna do wrong. If that's what it's going to take, they might as well-to see if they still feel cool after they get whipped."

Spilyay Tymoo

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