Auditions For ASCiT Musical
Begin Next Term
by Flora Constanten
as told to Marc Donner
Auditions for Kiss Me Kate are coming up after Christmas vacation. They will be held in Baxter Lecture Hall on Sunday, January 20; Tuesday, January 22; and Saturday, January 26. The weekend sessions will be from 1–5 p.m. while the Tues­day session, out of respect for things like classes and finals, will be held from 7:30–9:30 p.m.

Standard audition procedure permits you to select music you will sing, but you are required to provide two copies of the music for the benefit of the musician and the director. Since this is a Broadway musical, you ought to audition with a piece of music from a Broadway musical, so the director will have some idea how you’ll sound in Kiss Me Kate. Music for Kate is available from Flora Constanten at 212-1575.

Continued on Page Three

Big T Assessment
A $2.50 charge will appear on most of the account state­ments [term bills] that under­graduate students will receive at second term registration (January 7, 1974). In accord­ance with the bylaws change made last month, it will bring the total assessment for The Big T through first and second terms to eight dollars ($8). It is not the same charge of $2.50 that appeared on the term bills sent out a few days ago. Students who have al­ready indicated that they do not want a yearbook should not be charged.

Cali­fornia Tech
Great New Season on Tab
by Marc Donner
Now that the Autumn Finals are over and the students and teachers have no time for anything but playing pinball, Rich, Diplomacy, bridge and all the other competi­tive amusements designed for shilling away the tedium of Finals, teachers learn specific courses teachers learn specific courses to present to their classes. This restricts their creativity, and all too often leads them to proceed without under­standing the basic principles they are demonstrating. If a bright student, e.g., a future Techer, asks “why does it work that way?” a teacher may fumble for the next half hour without giving a straight answer. With a little more presence of mind, he may confess ignorance and look up the answer for the next day, by which time the students’ interest has probably been lost.

The unfortunate situation may be prevented by offering teachers “subject-matter” courses, such as the Metric Systems Forum. The subject itself is taught to the teachers, with relatively little consideration given to methods of teaching it in elementary classrooms. They do not learn the details of demonstrations; hopefully with a good general knowledge of the subject they can design their own presentations. The opportunity for creativity on the teachers’ part is thus restored, and im­mediate answers to students’ questions are likely to be avail­able.

For the last five weeks Mr. Browne has been presenting various aspects of the Systeme International, from its origin and foundations to the art of helping students to think metric, Homework in the class involves inventing classroom demonstra­tions, as well as ordinary English-Metric conversion problems.

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The next two weeks of the course will feature Caltech’s very own Prof. Richard Dean. For those of you who can’t wait to learn the difference between a centisecond and a hectarogram, the next meeting will be on Monday evening at 5:30 in 151 Sloane.

Crime Wave Continues
To Plague Students
Techers Warned Not To Leave Doors Unlocked
by Karl Kuhlmann
The real world has come to Caltech. Most Techers know about the wallets and watches stolen dur­ing rotation week. The burglaries and thefts have started again. Just before Thanksgiving there was a mysterious fire in Willard (Dabney president) Brown’s room; the next day his room was rifled. Some time later, a former member of Dabney House had a large sum of money, a camera, and other possessions taken from the room of a friend. Various other items, including calculators, have since been removed from other Dabney House rooms. A few days ago, a room in Fleming was lifted away.

Several suggestions have been offered about what may be done to bring the problem to an end. Doors should be locked when a room is going to be empty for an extended period. Be suspicious, ask him for his identification. And if something is definitely wrong, get in touch with campus security (50 on the campus phones in an emergency).

Above all, be careful. Lee Chapman, the manager of the security office, has emphasized that building should be relocked after they’re entered. The prob­lem will probably vanish eventu­ally, but it will take positive action on the part of everyone.

Metr­ically Speaking...

Beckman / Ramo

Great New Season on Tab
by Rich Feldman
In a series of weekly lectures at Caltech, teachers from the Pasadena Unified School District are re-learning the basics of the S.I., or metric system.

Instructor Lee F. Browne emphasizes that the Forum is not a “methods” course. In methods courses teachers learn specific demonstrations to present to their classes. This restricts their creativity, and all too often leads them to proceed without under­standing the basic principles they are demonstrating. If a bright student, i.e., a future Techer, asks “why does it work that way?” a teacher may fumble for the next half hour without giving a straight answer. With a little more presence of mind, he may confess ignorance and look up the answer for the next day, by which time the students’ interest has probably been lost.

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Continued on Page Four
ConservE Energy: Sleep!

This refers to your various anti-Nixon articles in the November 2, 1973 issue of The California Tech. I don't know if I am just passing along a story from the school paper, but the point might be here, goes on.

There is so much good in the worst of us and so much bad in the best of us . . . I submit a thought for each of you who are so strongly anti-Nixon. Before you die, each of you will be accused many times, both justly and unjustly, about things you did in . . . You question this statement? Wait and see!

Another Punt

The Caltech Spartan/AGA Chapter will meet this Saturday, Dec. 8, for the last meeting of the month. It will take place in Daboy House Lounge at 7:30 p.m., and will feature Avalon Hill and Diplomacy games.

The next meeting of this sort will be on Saturday, Jan. 5. Again the meeting will be in Daboy House at 7:30 p.m., and will be Science Fiction based.

THE ASCIT FRIDAY NIGHT MOVIE

Saturday, December 14th
at 7:30 and 9:30 p.m.
in Baxter Lecture Hall

The Candidate

The only way we have any
chance of stopping these thefts is
by being suspicious of strangers.
Continued on Page Six

Parent Comments on Nixon Editorials

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Y’s Finals Decompression Chamber Is Back Again

by Tim Groat

It’s hard to believe, but not quite everyone and everything is out to cremate you this week. In this mad world of PhI and AM959 there is one last-ditch measure which may help you survive in spite of it all: the Finals Decompression Chamber. The Fallsch YMCA is the creator of this noble crusade to wipe out the scourge of Blue-Book Bonds. From its humble beginnings three years ago in the Health Center (psychiatric ward?), they have outgrown several clinics so that they now expect to fill Winnett Lounge on all three nights. If you need a place to punt between 8:30 and 1:30 tonight and every night through Sunday, try the big flick-in at Winnett Lounge.

Inside you can find food, drinks, people (including professors) to have interesting bull sessions with, cards, chess, Risk, and various other games which may be going on. The fun and games aren’t just for the poorly dazzled undergrads. Faculty and grad students are welcome to come on in and provide a stabilizing influence.

When that fanatic gets to be a little too much for you, rest assured that you can always save yourself by putting the Red Bible aside in a place of dignity and letting your bubbles pop and unleashing those pent-up emotions. Come and see if you still have anyanity left.

Join the Peace Corps

Francophone Africa Needs You

The chairman of the Hale Observatories’ Comet Committee, Dr. Guido Munch, has said, “There are many unanswered questions about a comet’s composition and dynamics, and we will be seeking the answers.” As a result of our improved instrumentation, we expect to see several molecular constituents that haven’t been detected before in comets. We also want to learn more about how the comet’s molecules are broken down by the sun’s heat and how its atoms evaporate as it leaves the vicinity of the sun.”

He and Dr. Jesse Greenstein will use the 200-inch Palomar telescope to study the velocities and composition of the gases in the comet. They will record spectra in the near-infrared region. Dr. Greenstein has said, “The outflow of gas of the comet must be millions of 10 to 20-mile-in-diameter balls of matter like Kahoutek would be the sun every one hundred thousand to a millions years. These nuclei contain a high enough density of particles and gases. The comets are only beaten for a year or so when they are near the sun, when they develop a tail, and spend virtually all the rest of their lives on the outer fringes of the solar system.”

Almost certainly comets contain water, but all we see is the hydroxyl radical, OH, which is probably a remnant of a water molecule. Apparently the sun’s light breaks the comet’s stable molecules into radical, ions, and eventually individual atoms. The atoms evaporate from the comet as a result of the heat of the “sun.” Greenstein hopes to see water and hydrogen molecules in a comet for the first time. As well as other metals and compounds not seen before. He and his colleagues are anxious to test whether Kahoutek is a “dirty comet.” If so, the light from the comet will be reflected and will block out our molecules.

Comet Not So Bright

In recent developments, spectrographs taken last week on the 200-inch telescope by Dr. Martin Schmidt indicate that the comet is surrounded by gas, which at very little pressure. However, he added that as a direct result of this, the comet will be less bright than was originally supposed. Dr. Schmidt has been able to determine spectroscopically that the comet is a rich mixture of carbon, hydrogen, and oxygen.

Continued on Page Six

Musical

Continued from Page One for those who want to audition with it. The orchestra for the musical is being organized by John Gustafson, 449–9606. Auditions have not yet been scheduled, but interested musicians should call Gustafson. The musical will eagerly welcome anyone from the Caltech Band, and the Chamber Music group, as well as anyone else interested.

The musical is still looking for a choral director, so if you are interested, write to the address above. Call Flora at x2157. This job is a big one, so if you qualify for this program, write to: Peace Corps; College Degree Program, 112 Hartwell Hall, Ithaca, New York 14850. Peace Corps is helping to fill, so if you qualify for this program, write to: Peace Corps; College Degree Program, 112 Hartwell Hall, Ithaca, New York 14850. Peace Corps is helping to fill, so if you qualify for this program, write to: Peace Corps; College Degree Program, 112 Hartwell Hall, Ithaca, New York 14850.

Pick Up & Delivery

THE CALIFORNIA TECH

Profs Ready for Comet Research

Kahoutek is swinging in right on schedule, but it can’t be as bright as was earlier predicted. Even so, it’s liable to be the “Comet of the Century” in both visual impact and its affect on current knowledge about comets.

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The Angel Album
Angel SBR 3800

Twenty years ago, almost to this day, Angel Records was born and to help celebrate this anniversary year, they produced a commemorative record set containing some of their best recordings of the past twenty years.

The saga of Angel began when an imaginative Scotman, representing E.M.I. Limited came to New York in 1952 to find an American distributor for the European record company. He found Davio Soria and the two of them decided that what the company really needed was an American subsidiary.

Thus, the Angel label appeared. During the early years, they relied heavily on the artists booked by E.M.I. such as Elisabeth Schwarzkopf, Herbert von Karajan, Maria Callas, Otto Klemperer, Dietrich Fischer-Dieskau, and many others. Angel has continued their expansion almost every year since 1953 and in the past ten years has introduced the low priced Seraphim label and obtained exclusive licensing rights to the Soviet "Melodiya" recordings. Now, the Angel label is known all over the world for its excellence.

The commemorative records are a prime example of this excellence. Purely from a technical standpoint each of the performances of the 26 representative singers, instrumentalists, and orchestras on the two records is a masterpiece by itself. One would have to find fault with either of the records.

Angel divided the two record set into four distinct parts - one part per side. The first side is "The Early Years," a collection of selections are famous, the music most exciting works were the Coriolan Overture by Beethoven and a portion of Stravinsky's Petrouchka. Heavy music is more difficult to play and more beautiful, but a record such as this that does not contain exciting works such as "The Ride of the Valkyries" becomes a trifle boring.

The "Great Instrumentalists" is the title of the third side and is truly deserving of that name. Among the selections are Beethoven's Sonata No. 8 with Daniel Barenboim on the keyboard and Bach's Double Concerto played by Itzhak Perlman and Pinchas Zukerman.

The highlight of "The Great Singers" on the fourth side is a performance of Bizet's Habanera by Maria Callas. It should be noted that this two record set is not one of those "fifty melodies on two records" deals. The performances are complete and represent the finest Angel has produced in the past twenty years. The records are the kind that any collector of fine classical music will treasure for years to come.

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- Dave Pelzer

PLAYIN' FAVORITES by Don McLean. United Artists

WARNING! If your previous Continued on Page Seven

THE CALIFORNIA TECH

Beckman
Continued from Page One

Dec 17th THRU DEC 31st

ROBERT WHITEHEAD & ROGER STEVENS' ORIGINAL NEW YORK PRODUCTION

BARBARA BEL GEDDES

in JEAN KERR'S

new romantic comedy

FINISHING TOUCHES
directed by JOSEPH ANTHONY

* These are reserved seats, for the best available, mail coupon early. Enjoy your vacation in Los Angeles. Verification of student status is needed when mailing order blank. Xerox of student I.D. is acceptable.

NO PERFORMANCE DECEMBER 25TH
CHANGED TO SUNDAY, DECEMBER 30TH

MAIL ORDERS FILLED PROMPTLY

TICKET ORDER BLANK. Mail orders NOW! Make check payable to Center Theatre Group and indicate first and second choice, stating DATE AND TIME.

DATE TIME Dote

$3.50

$3.50

TOTAL

Tickets also at Box Office

SCHEDULE. Mon.-Thurs. Eves. at 8:30 PM
Fri.-Sat. Eves. at 8:00 PM
Thurs. Mat. at 2:30 PM
No performance Sun.
The ads for National General's Executive Action are interesting enough. Especially intriguing is the ad where the odds of all the material witnesses to the assassination of JFK being dead within the first years of the incident was listed. They're 100 quadrillion to one. Suspicious, huh?

Unfortunately, the movie itself doesn't intrigue one as much as the ads do. Executive Action, which explores the conspiracy theory of Kennedy's murder, is too neatly packaged. It replaces the very tidy Trumbo Report, leaving no room for audience speculation.

The actors' performances are all a bit melodramatic, at times becoming reminiscent of The Unconquered. The wealthy right-wing masterminds of the assassination plot are made just about as cold-blooded as possible, while Oswald is portrayed as incoherently as possible.

Executive Action is not as well done as it might have been, but it is still entertaining. If you have the gasoline and patience, it is playing in Westwood.

The ads for the Festival of Light are interesting enough. Especially intriguing is the ad where the odds of all the material witnesses to the assassination of JFK being dead within the first years of the incident was listed. They're 100 quadrillion to one. Suspicious, huh?

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Car Project Wants Your Bod
by Tim Great
Anybody who lives in the greater Los Angeles area has to face the sky soon or late. It can't be avoided because here it is almost ubiquitous for human respiration. But after a while, it is likely to get much better until oil reserves are totally depleted, it would be impossible to hold your breath waiting.

A much better plan of attack would be the one adopted by the Caltech Clean Air Car Project. Since their start in 1970, they have been investigating ways of improving the quality of our air. Their efforts have been concentrated on what can be done to correct smog-synthesizing engines in cars that are already on the road.

Majors of research have been in the practical considerations of fuel car conversion and in the fitting of reasonably simple, inexpensive device to older cars.

Clean Air Car Project

The CACP was the end result of a chain reaction that started with the formation of a clean-air car race. The cars that comprised the team, additional personnel, and the work made the CACP permanent. Money was extorted from the projects ASCIT research project, EQL, and the Rockefeller foundation.

Some CACP gathered enough information to begin consultations with businesses, that wanted to determine what fuel system would yield the best economic benefits. They poked data into a stack of punch cards, and assembled a computer program to help optimise the return. Rising in proportion and natural gas costs have effectively eliminated the need for this program; fuel savings are too small to justify the inconvenience and the cost of the conversion.

The $1.49 Smog Device

Meanwhile, it had come to the attention of CACP that removing the highもなく カンタム in an engine makes emissions fall considerably. Since the cost of cutting and plugging a little rubber hose is insignificant, this warranted more investigation.

CACP found that this method would substantially reduce exhaust emissions by 40% (at the cost of a tune-up).

Unfortunately, the state of California frowned upon having a new device that could cut the bills and put any assets or insurance manufacture a smog-device. Fortunately, somebody came to the rescue or saw a way to make piles of money obtained $2 million of insurance from Lloyd's of London and went into business selling what amounted to a long metal pipe and a golf tee to plug the vacuum hose. All seemed well for the $1.49 smog device (which was also marketed) until the state legislature came into the scene.

In a big three automaker showed up with “two eight by ten glossy photographs with circles and arrows and a paragraph on the back of each one,” explaining how the bad valves in the picture caused by the VSAD. They had no other evidence. The legislature gave a little apprehensive about making citizens buy a smog device that an automaker said did bring about savings. Research done by CACP (from the records of auto service centers) showed that any results attributed to VSAD were just as likely to be the result of mechanical neglect. The automakers enacted new requirements that made the devices that doses down to around 60 mph, which makes them insignificant on the freeways.

Forth

A Good Way to Punt
by George and Ralph
On each hand, the declarer must decide the best way to play his contract. All but a few of the ways of playing most hands can be immediately eliminated. Choosing among the remaining alternatives is often very difficult.

North
S
H 10 76 2
D
C
Q 10 54 3

South
S
A K 10 6 4
H A Q J
D A 10 9 8
C

Opening lead: King of Clubs.

Fouthing: South
West
North
East
2C Pass 2D* Pass 2H Pass 4H* Pass
3H Pass 4H Pass
5H Pass 6H Pass
Double Pass Pass
*Journalist response to artificial two Club bid.

Two years later, VW was entered and went for the ride in an invited position.

Keeping the cars going and extending improvements continues in the CACP laboratory/garage. They have an extensive network of electronic testing devices, automotive test equipment, and fueling facilities for natural gas and propane fueled vehicles. The fuel facilities are available to the Tech community, but if you need to buy some fuel from them, make arrangements in advance: the facilities can’t handle much beyond car project use.

Help Wanted (As Usual)

Like any other student activity that gets publicized in the Tech that CACP could use help. Those who are completely amateure auto mechanics or genuine ME trolls from other places would be the one adopted by the CACP could use help.

Bottom of the Week

The Institute is threatening (again) to crack down on parking violators, and actually start tow ing cars away, amid rumors that student house funds are being used to maintain the Athenaeum parking lot anyway. It has been pointed out that the parking rules are not enforced equally, i.e. when students park in faculty members’ reserved spaces, they get tickets immediately and phone calls to wake them up to move the offending vehicles, but when students spaces are violated, they are told to find the offender themself.

A petition calling for the impeachment of Mark Johnson turned up in the Dabney House lounge last week. It seems to have died, but his term ends soon anyway... Questionnaires from ASCIT have been sent to the members of the faculty to determine their feelings about four and/or pass-fail... the Valkyries are just over the horizon...
**Construction Projects**

San Pasqual & Throop Plans in Winnett

by Dave Peine

The removal of the rose garden at the south end of Beckman Mall caused a mild reaction among members of the Caltech community this week. The action was no little publicized beforehand that a gardener apparently trimmed the bushes the day before they were bulldozed out of existence.

To determine why such action was taken, the Tech talked to Mr. James Westphall, the campus architect. Westphall stated that the plans for the San Pasqual Development had been on display outside the Board of Trustees Room in Millikan for some time last year. He added that the Board of Trustees approved all of the plans before any work was done.

Now Playing Through...

In an effort to make the Caltech community more aware of what's going on, he offered to display the San Pasqual and Throop drawings where people would be more likely to notice them. Consequently, they are on display in Winnett Lounge until December 21.

Concerning the rest of the San Pasqual project, Westphall indicated that the present construction from Chester to the Creflin driveway should be finished by the beginning of January. Some of the landscaping might take longer, he conceded, since various alternatives for the plan are still to be considered. However, he estimated that work would begin in March or April with completion set for the summer. The Stuartvatt Iris Garden, planted last year, will eventually return.

The Throop Site plans have Continued on Page Eight

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**Critical Ear**

Continued from Page Four

interest in Don McLean was in his vocal abilities or his beautiful songwriting, stay away from this album at all costs. Don't get me wrong about the quality of this album. It is a very good album, it just isn't much of a Don McLean album. It sounds more like "More Music From Deliverance.

Playin' Favorites is an album of Don McLean doing just that, with the favorites being chosen from the field of country music. The album includes such songs as "Muleskinner Blues," "Mountains o' Mourn," "Lovesick Blues," "Old Joe Clark," and even "Happy Trails."" I'm just sorry that you like mountain music, there are quite a few great artists on the album but they are not all about the work. In fact, except for singing on it, Don McLean had very little to do with this album. All of the songs were written by other writers, most of the music is played by other musicians. I realize that it is the right of any artist to do whatever he or she wants to do, but it just doesn't seem fair for any recording artist of merit to do something like this. Playin' Favorites is plastic copies of Van Gogh's ear, Montoya playing the nine flute, Judy Collins redding, Sir Laurence Olivier doing Drano commercials. Maybe it's true that there are enough people around who would buy records of their favorite singers gargling to sell such a record. I'm sorry that Don McLean had to try and find out.

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**Forum**

Continued from Page Two

However, a valid basis for impeachment, unless that is, he could be impeached for my three criticisms stated earlier. In all sincerity, he has made some substantial international achievements. In fact, I believe, he has almost eliminated the possibility that you men, and my sons, might use their life in another abominable world war. This I do believe. So I think even Nixon has some good points.

Anyway, that's the way I see it.

Sincerely,

Warren V. Stough

Peiser Complains to Lee Browne

Last Saturday morning, one of the students in our house bought a high school student stealing food from one of the refrigerators in the hallways. Although we had no proof that he was a participant in your program, we strongly suspect that he was.

In the past, students in the program have been caught in the act of vandalism in the Winnett game room and the lounge. One of the members of the administration told me he walked into Throop one Saturday morning and found one of them coming through a transom.

I realize that you are doing all you can to keep these kids under control but I feel that the advantages outweigh the disadvantages. Unsupervised outsiders on the campus invite trouble. To avoid it, the rest of the Caltech community should be on the campus when they are.

--- Dave Peiser

Peiser Page House

More Computer Money Wanted

The system of accounting used on the PDP-10 inhibits student use of that machine. It is difficult to get computing money because it is necessary to get a grant from someone who needs the money for his own students. The only account for student individuals that I know of is #98372, began running out in October. As a result, students who are high computer users find themselves reminiscing about their high school days when they had almost unlimited use of some type of computing facility.

The usual grant size, $50, is barely enough for a week's computing (and a rate increase is scheduled for next term). The Institute can easily permit more computer usage, as the PDP-10 now usually runs above 80 or 90 percent idle. It would cost little to put the PDP-10 to work and get a return from the money invested in it. I should not need to point out that Stanford and MIT both have PDP-10's open to unrestricted student use.

I hope that this situation will be reviewed so that the present unworkable system can be replaced.

--- Larry Paulson

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Construction

Continued from Page Seven

The best way to see our northern neighbor is to take the Trans-Canada Highway that runs nearly 5,000 miles from Victoria, British Columbia, to St. John's, Newfoundland, on the east coast. Hitchhiking is legal, popular and not expensive [if you don't accept presents from strangers]. Thumbs from the road shoulder or street curb and the mounties won't bother you. You'll find many mounties on the Trans-Can and boys outnumber girls four to one.

They are scheduled for completion by March.

The construction company claims that Mold-Prime will be finished by March. Westphall suggested that May was a more than likely date. The addition of a boiler and two cooling towers at Central Plant will be completed in the spring to supply the new buildings with heating and air-conditioning facilities.

For all of the projects, Westphall emphasized that the amount of rain that falls in the coming months will affect the completion dates. Assuming the winter is not too wet, most of the projects will be completed by June.

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Tech Stomps UCLA
In Ice Hockey;
Wins First Games
by Clyde Barrow
The Caltech Ice Hockey Club opened the 1973 season of the Southern California Collegiate Hockey Association by defeating Occidental last Sunday night by a score of 11-3. Inspired by the pugnacious ability of defenseman Bob Gardner, Caltech outshot Oxy 40-12. The team was led by Prof. Fred Culicic and Bill Harris, who scored two goals each.

In exhibition games played in November, Caltech defeated both UCLA and Cal State Northridge by scores of 10-3 and 3-1. Leigh Moyle scored 6 goals against UCLA and Bill Harris had two goals against Northridge.

The team returns to its home ice at the West Cowina Ice Arena at 11 p.m. Sunday, January 13, against Cal State Northridge after a holiday tournament in Montreal.

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Why Not Visit Canada?
by Tom Grimm
If Europe is too far away, and our own country is too close, try Canada this summer. Go north and you'll find a vast and varied land. Only the Soviet Union surpasses Canada in geographical size. And few nations can complete with the diversity Canada offers its visitors.

The Calgary Stampede in July, billed as the world's largest rodeo, is unique. There's still gold in the Yukon and you can pan for some during the summer months. Like England, there's a colorful changing-of-the-guard ceremony. It happens every morning at 10 o'clock until September by the Parliament Buildings in Canada's capital, Ottawa. You'll also find the best views of Niagara Falls from the Canadian side.

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