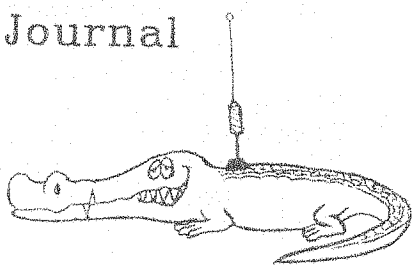
JEREMY

JEREMY : The Physics Society Journal



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EDITORIAL

Welcome to the second edition of **Jeremy**, rush released less than a month after the first (we hope nobody expects this kind of frequency all year). As you will, of course, have noticed, the magazine is still called **Jeremy**. No entries have so far been received in The Great Magazine Name Competition. Quite the reverse, at least one letter has flooded in, in support of the current name (see 'Letters'). It will take one hell of a name to knock **Jeremy** off the front page - but don't let that stop you submitting, if you feel you have a better title!

Entries have begun to trickle in for the Quotes Competition, but we still need more submissions, particularly from First and Third Years. We KNOW that your lecturers are making quotes worthy of printing. One lecturer who shall remain nameless (Ferg Brand) was even heard to say that he would have spice up his lectures a bit, now that people were really listening - so don't be bashful, send in those quotes.

The deluge of quotes from Ian Falconer's 2P class, however, may lead to the stewards being called in and swabs being taken - reliable sources claim that he is, in fact, using steroids to boost his performance.

Since the last issue, the Physics Society, itself only seven weeks old, has organised three interesting and very well attended talks, and held the Inaugural Society Party, which was also very successful. The reaction to the first issue of **Jeremy** was very pleasing, though some First Years have complained that most of the jokes were too 'in' for them. We have tried to fix this as much as possible, but too some extent it is unavoidable.

As the year progresses though and students experience more of the monotony and tedium of life that is First Year, we hope the jokes will become a little clearer. So keep you copies of **Jeremy** - in six months time they might be funny. If they aren't funny by then, then you will probably have failed Physics I, and be preparing for CS2 - in which case you're not worth worrying about.

Anyway, keep sending quotes along to us (as well as cartoons, caricatures - anything) and we promise to publish them even if they're only slightly interesting (we published this lot didn't we?).

The Society's lunchtime talks have got off to a roaring start. Anton Garrett showed an amazing series of slides of light effects in the atmoshpere; Brian McInnes expounded on the physics of soap bubbles with the help of some exhilirating demonstrations (at least 40 percent of which actually worked!); while Ian Johnston harangued/enthralled (strike out whichever is applicable) a recorded audience of 120 people on a paradox of quantum mechanics.

We're sure that the next talk, the last for this term, will be of an equal standard, when the dynamic LAURIE PEAK dissertates on "The Fascinating Nucleus" - a guided tour of the exciting world of the atom. This talk will be held at 1pm on Wednesday April 30th in Physics LT8.

Next term we have an even better line-up (if that's possible). The talks will include;

* Prof. Dick Collins with "Physics is Phun" - a whizzbang collection of every demonstration you've ever seen and even more you didn't know about.
* Dr K.J. Hunter from Scientists Against Nuclear Arms has been invited to speak.
* Dr Michael Large with a MOST interesting verbal tour of the Molonglo Observatory Synthesis Telescope.

The Inaugural Society Party

The Inaugural Party was held by the Physics Society on Friday April 11th, and was enjoyed by all (at least all I spoke to) who attended. The attendance was good, in that about 40 people turned up - which was all we catered for, however it was disappointing to see so few faces from the Undergraduate Years.

It takes absolutely no prompting whatsoever to induce some people to imbibe cheap liquor. As a result the turn up of Staff, Post-Grads and Fourth Years was excellent - few new faces were seen from First, Second and Third Years though. As a result a great deal was missed out on by the stop-at-homes.

For example - the sight of Ian Falconer cooling his beer with a flask on liquid nitrogen, was one of those once-in-a-lifetime experiences, which few can claim to have witnessed. Or consider, not having seen a sparkling impromptu gymnastics display by the sprightly Bruce McAdam on the Solar Physics Roof pergola. And who in their right mind would have even contemplated not hearing Anton Garrett expound at length on just about everything - with particular reference to why experimental physicists never predicted it!

In short, if you didn't come you missed out on quite a deal. However, don't despair - another party will be held in the not too distant future, at which this failure can be rectified.

A major function of the Physics Society is to promote activities between all the groups associated with the School of Physics - so the message to those undergraduates who haven't become involved, is to wakeup!

How To Join The Physics Society

Joining the Society is not really quite as hard as it sounds. There are no secret rituals to endure, no complicated examinations to pass and no inscrutable, unsolvable problems to crack. In fact, all you have to do is go up to the Treasurer, say "I want to join the Physics Society", and hand over the magic $2 membership fee.

Admittedly it can be a bit hard to find the Treasurer sometimes. The best way to find him is to come to one of the Society's talks, at which you will find him most eager to accept your membership, and your funds. After which you will be a fully fledged member of the Physics Society.

CLOSE ENCOUNTERS OF ABSURD KINDS

It is not often that an accurate date can be given for the beginning of one of the ratbag cults, but it can be done for UFO's (or in case there is anyone who does not know what those initials stand for, Unidentified Flying Objects). On the 24th of June, 1947, one Kenneth Arnold reported that, while flying his private plane in upper Washington state in the U.S.A., he saw nine disk-like objects speeding across the sky. In sending this story nationwide, an imaginative reporter coined the name "flying saucers", and so a craze was born.

It obviously struck a very deep chord within the American psyche, because during the rest of that year, 122 more sightings were reported from all over the country. By 1952 the total had grown to over 1,500. Very early the suggestion was made that these objects were extraterrestrial spacecraft piloted by little green men (or LGM's for short). In the cold war atmosphere of the 1950's, the U.S. government was rather more worried about IBM's (Intercontinental Ballistic Missiles), so two independent committees of enquiry were set up; one in 1951, financed by the Air Force, called the Blue Book Project, and another in 1953, financed by the CIA, known as the Robertson Committee.

These committees worked in secret and after they produced their reports, there were loud cries that valuable information was being suppressed. These cries didn't really die down until their files were made public under the Freedom of Information Act, in the middle of the 1970's. In the meantime a third enquiry, the most open yet, funded by the Government through the University of Colorado, known as the Condon Commission, started taking evidence in 1965. It published its report in 1969, and if you would like some eye-opening evidence of just how gullible and unreliable as witnesses people can be, you should read the report of the Condon Commission.

Basically the findings of all three committees were very similar. Between them they investigated nearly 2000 reports of UFO sightings. The largest fraction of these, about 30%, were established to be misidentification of ordinary astronomical events. About 25% were ordinary aircraft. Most of the rest were satellites, weather balloons, deliberate hoaxes and so on. And right at the bottom of the lists were less than 2% which they classed as "unable to be positively identified". They did NOT say they were alien spacecraft, only that they couldn't tell what they were.

But despite the 98% of sightings that proved groundless, the UFO nuts whooped for joy about the residual 2%. At long last the had official confirmation of what they wanted to believe in. And one of the cases that they made most noise about, involved the McMinville photographs. Let me tell you that story.

It was getting on towards evening on May the 11th, 1950, and Mr and Mrs Trent were in their backyard in the small town of McMinnville, in the state of Oregon; when an enormous flying saucer passed overhead. Mrs Trent ran inside and got their camera and was just able to take two photographs before it disappeared over the horizon. A month later, at the instigation of friends, they gave their local newspaper the two photographs which showed an object roughly the shape of a rubbish bin lid in the sky above their farm. In 1966 these photos were gleefully resurrected for the Condon Commission.

Now it really is quite difficult to carry out many very sophisticated tests on photographs. The problem is, how do you tell if the the object you're looking at is something small close up, or something big far away? If it isn't actually hanging on a string, which can sometimes be detected

look for is whether the apparent brightness of the object is consistent with the brightness of other objects on the horizon. In this case that looked okay, so the Commission's photographic expert was forced to call it: "... one of the few UFO reports ... consistent with the assertion that an extraordinary flying object, silvery, metallic, disk-shaped, tens of metres in diameter and evidently artificial, flew within sight of two witnesses". Of course, for years after, the UFO mgazines reported this rather guarded statement as positive confirmation that alien spacecraft were indeed visiting the earth.

Well, some years later, two independent skeptics - and thank heaven for skeptics! - decided to do their own investigating. The first thing that struck them as fishy was that the town of McMinnville already had a reputation of being a hotbed of UFO sighting reports, and UFO investigators are usually very chary in those circumstances. Then a very important discrepancy emerged. A visit to the Trent farm established clearly that, when the photos were taken, the camera was pointing in a northerly direction. That meant that some shadows on the wall of one of the out-houses, that were quite clear in the pictures, were on an eastern wall. And that meant that the sun must also have been in the east. But the original story was that the photos had been taken in the evening. Furthermore, the shadows were clear enough to work out exactly where the sun was in the sky; and that showed that the two photographs had been taken 15 minutes apart. But the Trents had said not more than two minutes.

So they'd lied. Why? Why should they have complicated things by saying it had happened in the evening when they could just as easily have said the morning? Who knows? Possibly because their neighbours would surely been out working their farms in the morning and would have noticed a strange spacecraft hanging round, whereas at about 8 o'clock in the evening they could be expected to be safely indoors having supper. Who cares? They'd lied, and their whole story was discredited.

There was one last point worth checking up on. Weather records showed that that particular morning had been very hazy, which probably accounted for the mistaken assessment of the brightness of the image. So at long last another fraud could be laid to rest and the McMinnville case, one of the great white hopes to survive the Condon Commission, went into the list of Identified Flying Objects.

Now, I've only talked about sightings of UFO's, the kind of things that are called in the trade "close encounters of the first kind". I'd like to talk about the more outrageous claims of actual contact with aliens at a later date. But even in what I've covered, fundamental questions are raised about the nature of scientific evidence. If the Trents had been just a little more careful, then presumably the UFO nuts would still have their evidence. God help us if a real professional Hollywood special effects artist took it into his head to fake a UFO photograph. I suspect that would not be able to be refuted. But it wouldn't prove that aliens were visiting the earth, would it?

This really is a dilemma, but there are other areas of ratbaggery where the same dilemma is easier to solve. Take pyramidology - you know, the belief that you can sharpen razorblades by putting them under little models of the great pyramid. Now there really are people who believe in that, and I can easily imagine someone that stupid offering as proof a photograph of an actual razorblade! There'd be no doubt about what to say to that.

I put it to you that the way out of this dilemma must be, as usual, to use Ockham's Razor: always choose the simple explanation in preference to the complicated one. If a photograph, or some other piece of evidence, is obviously very easy to fake, then it is simplest to assume it is a fake.

superfluous. That's how I think you've got to treat UFO photographs.

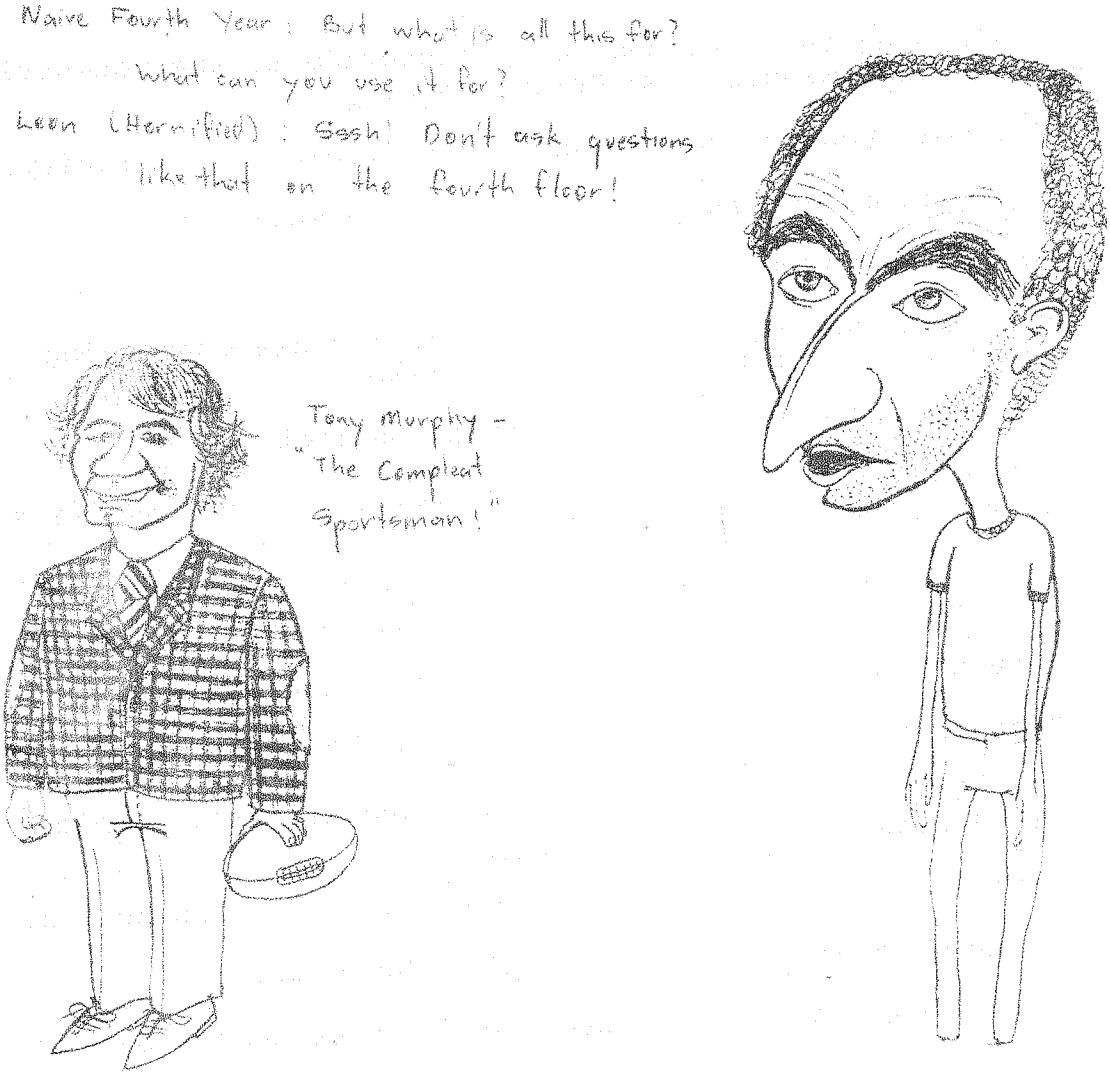
In fact I'd like to invent a new bit of terminology of my own. All such photographs - whether of pyramid-sharpened razorblades, or saucer-shaped objects flying through the sky, or little fairies in an English wood, or trancendental meditationists hovering a few inches above the floor - I would like to refer to all of these as "Ockham's Razorblades".

Information was taken from : Philip J. Klass, UFO'S EXPLAINED
James Randi, FLIM-FLAM

...oooOooo...

Meet the Post-Grads - Number 1 in a Series.

Members of academic staff are not the only non-undergraduate people to be found within the School. Post-graduate students (usually working towards a Phd or MSc), do a lot of the research carried on - as well as most of the drinking. We are including a series of cartoons of post-grads, as well as staff, so that this common (but little understood) form of life can be easily identified by the layperson.



Meet the Post-Grads - Number 1
Leon Poladian & Tony Murphy

The Quotes Competition

A slightly belated, but very energetic start to the season has been made* by members of the 'W.D. & H.O.Wills' Plasma Physics Department, with Ian Falconer leading the charge in fine, though somewhat controversial form. Under Ian's able leadership, the challenge presented by the 'Pix People' Theoretical Physics Department in the opening rounds has been met.

Dr Falconer's robust form has had students fading in the aisles, with blisteringly powerful strokes like :-

"I also mentioned last night - I mean last week..."

Studying a white filament,
"It's blue in character ... you guys have NO imagination"

"This is called fudging the experiment - I hope none of you guys do it"

"The physics was good, it is just that the answer is wrong."

"The technology is hard enough to cope with, let alone second year students."

"Watch it; you're talking to one of Australia's top experimental physicists."

Ian's slashing form has been ably supported at the non-striking end by steadfast performances from Brian James,

"...now, you may not think π is very close to infinity, but..."

"The fields go like this - 'ssstthhhhwwwwit'."

"I don't know much"

Not to be outdone though, the theoreticians are continuing their fine form, with length-of-the-field plays like,

"Am I talking nonsense?" - Graham Derrick

"That's the most naive picture... It's not really a defensible picture." - Graham Derrick

Student : So everything we've learnt is wrong?
G.Derrick : Yes ... but Gell-Mann got a Nobel Prize for this!

"You ask philosophical questions!" - Graham Derrick

"Let me forget about what I just said." - Don Melrose

"Is that why I can't see it? ... because it's completely wrong" - Don Melrose

"I'm a bit worried about these signs now" - Don Melrose

"I can't find my logic here..." - Don Melrose

"For God's sake - Don't quote me on that one" - Bob Hewitt

"I don't like minus signs" - Ian Johnston

*Eds: We did not make it up - the Department really is called this!

"The worst way to waste time, is to work out an integral someone else has done." - Ian Johnston

"Vary everything and see what happens - that's a physics experiment." - Ian Johnston

"You do it again, and get the same answer - That's Physics!" - Ian Johnston

The Kit-Kat Quote Rate

Once each contestant in the Quotes Competition has had five quotes entered, he/she becomes eligible to enter the Kit-Kat Quote Rate Competition. The Quote Rate is quite easy to work out -

$$\text{Quote Rate} = \frac{\text{Number of Quotes Published}}{\text{Number of Lectures Given}}$$

This issue, Ian Johnston and Ian Falconer have entered the Quote rate fray, however the table is still led by the inimitable Graham Derrick. The current standings are,

Graham Derrick	64.3
Don Melrose	57.1
Ian Falconer	42.9
Ian Johnston	35.7

...oooOooo...

RECENT NOBEL PRIZES IN THE SCHOOL OF PHYSICS!

The following members of staff have recently been awarded Nobel Prizes.

Part II

In this episode, Julian, Dick, Anne, George and Timmy the dog, visit the 'Benson and Hedges' Plasma Physics Department, where things are not all that they seem.

They all felt better after some refreshing orangeade, so it was with high spirits that the four children, and Timmy, followed Uncle Brian to the other end of the building. He had promised that the Plasma Department wasn't at all like the other parts of the building they had seen, and for that they were grateful.

As they walked towards the west wing, they could hear a voice booming up and down the corridor. It wasn't until they neared the end of the corridor though, that they saw what was behind it.

A small man in a straw boater, waving a red-striped cane stood on a soap-box in front of a large glass window. In one hand he held a megaphone, into which he was shouting.

"Roll up, roll up, roll up at the Wills Plasma Physics Department. See the amazing Tokomak, and the wonderful Suppers 1,2,3 and 4."

"Roll up, roll up for the career of a lifetime. Admission only ...", he stopped as he saw the children approaching, and lowered his megaphone.

"Well kiddies - how would you like to see the Tokomak go - flashing beacons, ringing bells, more coloured lights than a Christmas tree - "

Uncle Brian cut him off. "All right Max - calm down. These are my English relatives." He introduced the children.

"Julian, Dick, Anne, George and Timmy the dog; this is Max Brennan, Professor of the Plasma Physics Department."

"By the way Max", he continued, "can I leave them in your care for a while? You can show them around if you like."

Max agreed readily, and the children followed him into the lab.

"This is my Tokomak", he said proudly, standing in front of an incredibly complex looking machine, made of metal pieces of all shapes and sizes, and covered in electrical wires of all colours.

Julian was very interested.

"How does it work, sir?", he asked gravely.

"Just a minute and I'll show you", Max promised. He took them into a separate little room, where they found a huge control panel smothered in lights. He played with a few dials, then pressed a button. Immediately, a great big red light began to flash at the back of the room. The lights on the control panel began flashing, red-blue-orange-white-cyan-red-blue-orange-white....

"Oooh - I don't think I like this", Anne said softly, and Dick seeing his sisters pale face, walked over and held her hand.

They all jumped as bells began to ring. Suddenly, accompanied by a loud crash, a great pink light flashed from the large machine in the centre of the room.

"Isn't this wonderful!", Max cried.

Though Anne was still slightly pale, Julian was very impressed. "How does it work sir?" he asked again.

"What do you mean, how does it work?" Max asked in surprise. "I've just shown you. I go to the control panel, twiddle some of those black knobs, press the right buttons and the lights flash, the bells ring, and that great big pink light appears."

"No,no", Julian persisted. "How does it make the pink light appear."

Max looked slightly hurt. "Don't be silly boy - ", he frowned, the twinkle leaving his eye for a minute. "The pink light appears after I press that red button, along with the bells and the flashing lights."

"Anyway", Max decided, "I have to go and make a phone call. You stay here until Brian gets back." He picked up his megaphone and soapbox and was gone.

The children looked around them. The laboratory seemed very

"I don't know about the rest of you", he declared, "but I'm going to take a look around. Uncle Brian will probably be ages." He walked out the door, and the others watched in alarm through the glass window, as he walked down the stairs opposite the lab.

Dick found himself in a maze of dingy underground corridors. He walked around until he found what he thought to be the room directly under the laboratory upstairs.

Surprisingly, the door was open, and he peered into the room. It was full of boxes, and from the ceiling descended a number of pipes. Dick heard footsteps and, glancing into the corridor, saw Julian looking for him.

"Psst - over here", he whispered.

"What do you think you're doing?" his brother asked. "Uncle Brian will be simply furious."

"Look at this Julian", said Dick, ignoring his brother's outburst. I think I've found something here. Look at all these empty bottles and dirty glasses. I'm sure people have been using this room recently."

Despite his misgivings, Julian was curious. He crossed over to where the pipes hung down and examined the taps on the end of each pipe. Before Julian could stop him, Dick mischeviously turned one of the taps; and a flow of brown aromatic liquid gushed out onto the floor. They looked at each other in astonishment as they realized what the brown fluid was.

"You realise what this is, don't you Dick", Julian asked. Dick nodded. "And its coming out of the Tokomak room upstairs."

Julian nodded gravely.

"Yes, Dick", he continued, "someone is using the Tokomak as a whiskey still!"

END OF PART II

In the next installment, Julian and Dick discover who is making whiskey with the Tokomak, while Anne, George and Timmy, while searching for the boys, become trapped in the First Year Laboratories.

Meet the Staff - Number 4
Murray Winn & Bob 'Uncle Bob' Hewitt

This segment is the first of a regular column of miscellaneous bits and pieces, which we want to put in the magazine, but which don't really fit into any of the normal segments. They seem so good, however, that we have to put them in somewhere.

"The Prayer of the Scientist"

God, give me unclouded eyes and freedom from haste.
God, give me quiet and relentless anger against all pretense and all pretentious work and all work left slack and unfinished.
God, give me a relentlessness, whereby I may neither sleep, no accept praise, till my observed results equal my calculated ones, or in pious glee I discover and assault my error.
God, give me strength not to trust God.

from 'Arrowsmith', Sinclair Lewis

"All university lecturers know that what they serve up in lectures has a half-life period, the half-life period being the time it takes half the class to forget it. It is measured in hours."

from 'Science is Human', H.V.Parton

Most experimental Physicists rely on technicians for any really tricky problems, but even a technician would have a hard time with this air compressor guarantee card!

* This is an excellent equipment with very few noise and excessive reliability. Though unfragile, it is also robust, and should not be belted.
* Circuit arrangements ensure environments and input currents is best at both temperatures, including snow and hot.
* Very heavy fuses are supplied in plenty.
* Stability is too good on full battery and this should be lowered, but the input may be reduced to danger level if desired.
* The negative will be and the positive will not if supply polarity is incorrect, also, a humming noise will be introduced together with smoke.
* When setting up, the best angle has no smoke and slight smell.
* For accessibilty without vandalism use the many entrances, but switch them all off afterwards and before.
* When aligning, twiddle for strong current and prevent sparks.
* The motor should be good for ever, but pregnant wear-out may occour after a few summers if heat is applied.

DO NOT DOUBT THE GUARENTEE, IT IS BACKED BY MANY YEARS IN HONG KONG WITHOUT ODOR, PATIENCE OR THREAT.

Here is a challenge for all readers of scientific papers. Who can find the longest word/term published in a scientific journal. As a starting point consider the following German one - Elektonengeschwindigkeitsverteilungsfunktion.
And while discussing Germans, who ever said they don't have a sense of humour, as exemplified by the following publication in Surface Science Letters,

'ARSES (Angular Resolved Secondary Electron Spectroscopy) on O/W(100) at Various Annealing Temperatures'

Letters to the Editor will be gratefully accepted on almost any topic. The following missives were received since our last issue.

Dear Editor,

It is good to see the the Physics Society is re-born and has begat JEREMY! I took a copy to browse through and thought that I must put the enclosed in the mail for you upon my return to work today, to explain the name for the Theoretical Department!

Professor Messel has written that at the time of the late Sir Frank Packer's gift of $100,000 he tried hard to convince him that our theoretical physics department should be named after him and not after The Daily Telegraph - a publication of Consolidated Press. However he was too modest to agree and the department was thus originally named 'The Daily Telegraph Theoretical Department'. Since The Daily Telegraph has passed out of the hands of Consolidated Press and the Packer Family, such a name for the department was no longer appropriate and for some time it was known simply as The Theoretical Department. However Professor Messel felt that as Sir Frank was the first member of the Foundation and later a Deputy Chairman and Chairman of it, giving unstintingly of his time (and money) on behalf of the Foundation, that he should not be forgotten. He therefore recommended to the Vice-Chancellor in 1981 that the name be thus changed, and approval to this proposal was given.

Best wishes and good luck to you in your endeavours!

Sincerely, Rita Knight
(Personal Assistant to Professor Messel and Secretary,
Science Foundation for Physics)

Well there you have it folks. Prof. Messel has written! You can't argue with that!

The Editor, 'Jeremy'

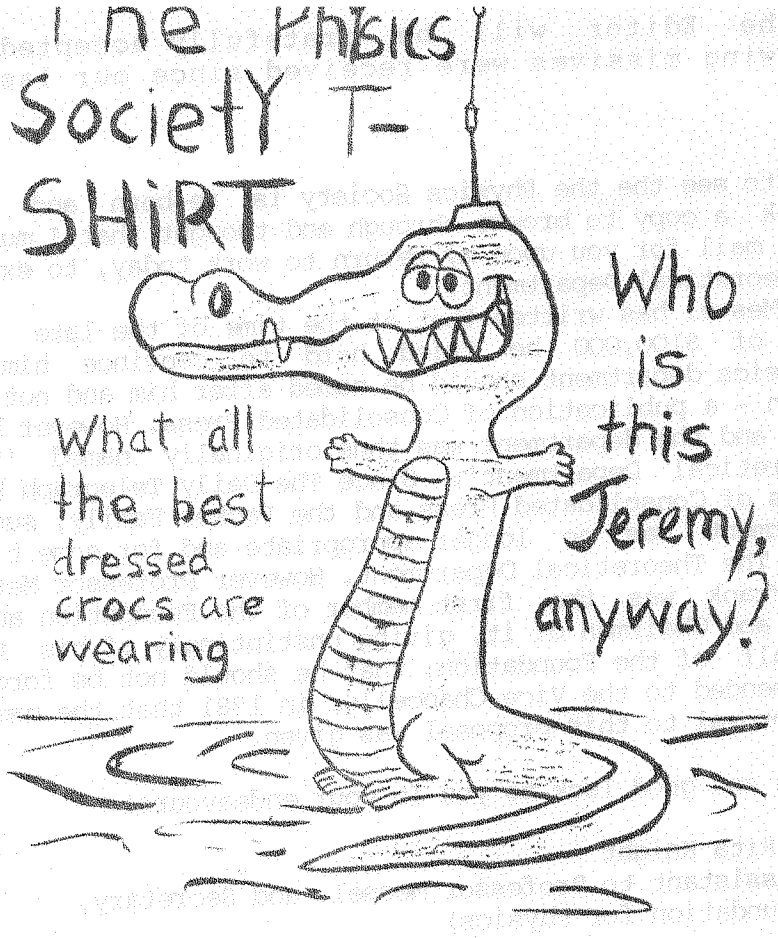
I am writing on behalf of ALL worthy Physics students (and am unanimous in this). We agree with the editorial staff's opinion that there does not exist a name which can surpass all the subtle qualities that 'Jeremy' possesses. As such, we feel that the title should 'Jeremy' should remain. To add some reasoning to this subjective view, we have included the following objective factors :

1. To change the name of the Journal (which, in practice, could not happen earlier than the 3rd issue) will result in something of an identity crisis.
2. It will require extra work for the editorial staff to change the title on the front page.
3. The Journal could no longer be validly referred to as J.Phys.Soc.
4. It will alienate ALL the worthy Physics students on behalf of whom this is written, which could result in a dramatic reduction in circulation, and an overloading of the waste disposal facilities of this University (the cleaners would go on strike if they were confronted with Laboratory waste bins stuffed with unwanted Phys.Soc. Journals).

We are confident that the editorial staff will take note of this support, and ignore any entries to the above mentioned competition which may eminate from unworthy sources.

Yours unanimously,
David Dawes (Physics IV).

The Editorial Staff can only Reiterate, we feel 'Jeremy' is a great name - however we still want suggestions for what people may feel is a better one.



STOP PRESS!

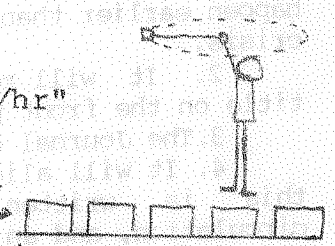
The following quotes were received just prior to printing - they represent the first First Year Quotes we have received! Well done, and can we have some more please.

The brilliant style of Professor Dick Collins has long been commented on. This issue he not only enters the Quotes Competition with a vengeance, but has stormed into the Kit-Kat Quote Rate table at his first appearance and is sitting equal with Ian Johnston on 35.7, with the following brilliant deliveries -

"I can tell this by my calibrated eye."

"If you jump out of a plane, you only reach 200km/hr"

"I'm going to eliminate gravity "
- and most of the first row too.



"A rigid body is a different thing to a mortician than to a physicist."

Commenting on Resnick & Halliday: "They have an unhappy knack of reducing problems to the point of absurdity."

Also, consider these gems from Phil Kirkpatrick - a Mathematician yet!

"This is a standard definition, not a personal eccentricity."

"It's an extremely important concept to rise above x-y coordinate fetishism."