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E D I T O R

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EDITORIAL

The first work in this series was the 'Perpetual Motion Hand Book' published in May 1967. It was followed by three Journals during 1967; Mr. Barrows brought out the 4th Journal too in March 1968.

There was no collaboration in attempts at perpetual motion inventions and as such many attempts based on incomplete or veiled information met with failures. This was repeated also in case of the Journal, which provided undistorted information on the subject and a forum of the inventors.

This fate of the Journal gave me a rude shock and I commenced publication of a book. To avoid controversy this subject was designated NATURE ENGINE(1).

This Journal is a result of joint efforts of two persons. More honorary collaborators will, we hope, raise up this effort to a desired level.

The earliest history of perpetual motion that is traceable is "Surya-Sidhanta" and "Sidhanta-Siromani" written in Sanskrit by Indian astronomers about 6th and 12th century by 'Varahamihira' and 'Bhaaskaracharya' respectively. The text of former first describes a demonstrational armillary sphere. It states further, "in each successive age this construction, having become lost, is, by the Sun's favour, again revealed to some one or other, at his pleasure". This is continuing till to-day.

The belief in the feasibility of perpetual motion machines must have reached Arabs from India during the 12th century. The perpetual motion mercury wheels of the Indians and Arabs, travelling westward introduced it in Europe during the 14th century. The note books of Villard de Honnecourt began to use the expression 'Perpetuum Mobile' in 1237.

Perpetual motion is considered an impossibility academicians, even when they can buy a 'Perpetual Motion Clock' or a 'Thirsty Bird' powered from continuous sources of energy in Nature. Should we call them NATURE ENGINE after the type of 'fuel' utilized?

Shortage of Fossil fuels is in view, consequently a search for utilization of free sources of energy and development of old projects is desirable.

D. R. DUTTA

(1) Nature Engine, by Dutta D.R., Calcutta, 1971.

ELECTRICITY FROM WIND POWER

by S. Chaplin, London.

During 1949 when the Enfield engineers were studying the economics of wind power as a source of heat for horticulture they received a contract from the British Electricity Authority (B.E.A.) for design, manufacture, testing and setting to work one wind-driven Electric Generator of 100 kW capacity (1), as Britain was running short of fuel.

The 'depression' principle of J. Andraeu, a French inventor, was selected though the conversion efficiency was slightly lower than the 'orthodox' plants and that the cost would be higher. Because in a 100 kW capacity plant its physical and mechanical advantages were considerable, which would progressively increase in value in larger plants (2). The rotor of the French prototype was 8 m diameter and in the Enfield 'Anemo-Electric' (a term analogous to hydro-electric) it was 24 m diameter.

This latest design which eliminates gearing has hollow blades, open at the tip, and when these are driven round by the wind, air is thrown out centrifugally; the depression (pressure below atmospheric) created draws up air through a tubular supporting tower at the base of which is a turbine driven by this ascending air. The turbine drives the generator which can thus be placed at ground level. The scheme has the advantages of reducing the weight to be carried at the top of the tower of avoiding the need for any specific relationship between the rotational speeds of the rotor and alternator and those of the wind, and of damping-out rapid changes in torque due to gusts. The overall efficiencies may be about 30 per cent of the Andraeu and about 40 per cent for the conventional machine (3).

The acceptance of this design by B.E.A. was made public at the Plenary Meeting of The World Power Conference of 1950. Both these prototypes were scrapped as the fossil fuel reserve improved after World War II.

(1) Nature Engine, by Dutta D.R., Calcutta, pp.28-30

(2) Progress Report No 1 of Enfield Cables Ltd.,
London, 1952

- (3) The Generation of Electricity by Wind Power, by Golding E.W., E & F.N. Spon, London, 1955.
- (4) 'Engineering' February 13th 1953 and March 25th 1955.

This Journal will direct its efforts in finding out interested inventors who may like to accept such prototypes as gift and improve it. - Editor.

PROBLEMS OF AUTOMATIC COUPLING OF A
WIND-DRIVEN GENERATOR TO A NETWORK

by F.H. Dolafond, Electricite et Gaz d'Algerie,
Algiers

Summary of the report of United Nations Conference.

1. Tests on the experimental 100 KW Andreau-Enfield wind-driven generator, designed to feed a triphase network, have permitted us to make the following observations.

2. (a) In a moderate wind, the power output is always varying over a great range. The network is never disturbed, and the automatic voltage regulator maintains an excellent power factor.

(b) On relatively calm days, these power variations compel very frequent coupling and uncoupling if all waste of energy is to be avoided.

(c) In a high wind, the power regulator, by its hunting action, increases the frequency of the variations in power.

3. Hence the adjustments and modifications that have been or will be made.

(a) The original manual coupler was slow and drew a large amount of current from the network; it has now been made automatic, almost instantaneous, and operates at close to zero power. The same has been done with the decoupling.

(b) Propeller starting and stopping is now automatic. These mechanisms give complete satisfaction.

(c) In a high wind, the amplitude of the hunting action could be reduced by modifying the rate of change of the propeller pitch.

Perfect operation requires a regulator taking account not only of the propeller speed but also of its derivative.

This problem may present itself otherwise for different types of machines.

4. CONCLUSIONS: We had not problem of power-output instability in a moderate wind.

FREE ENERGY RECEIVER

by Bob Jones, U.S.A.

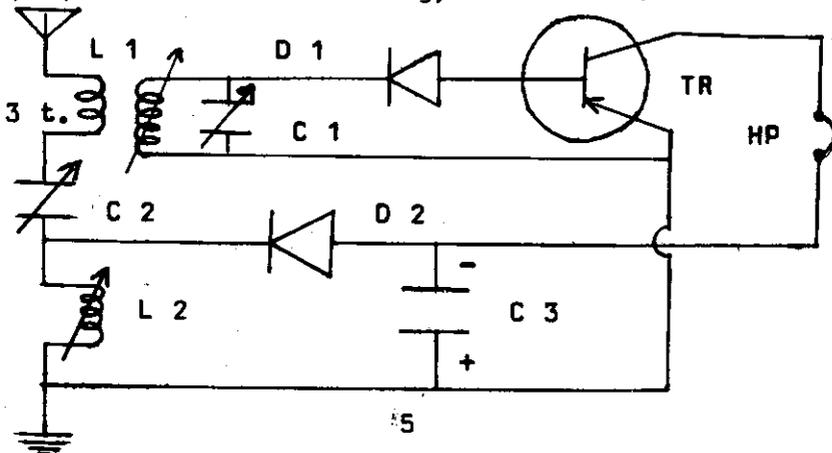
It is observed that within the cosmos, forces exist which seem to place electrostatic changes in various degrees of acceleration. This results in the radiation of energy carried by electromagnetic waves. Some are light we see. Some are radio or other frequencies. The later have been detected from planetary and steller sources. In fact, there are those Physicists and Astronomers who believe that we have detected a background noise which was created from the postulated, primordial fire-ball from which the creation may have evolved.

In any case, we can detect numerous energies from the cosmos. We can expect this to continue through the remainder of mankind's existence and reconing of time.

If this be the case, a simple radiofrequency antenna and diode is a source of free energy. In fact, such a system can power small pieces of equipment.

A pair of radio headphones of this free energy receiver continuously respond to static incoming.

Just as solar energy or local radio programme can be used as free power to, say, listen to other programme, so the incessent cosmic energy makes possible a perpetual source of energy and motion.



The circuit diagram in the previous page has two receivers: 1) Command receiver and 2) Free Energy receiver.

Components:

- L1, L2 - High Q ferrite loopsticks
- C1, C2 - 180 pf trimmer condensers
- C3 - 10 mfd Electrolytic Condenser
- D1, D2 - IN34A Diode
- TR - PNP type 2N77 or CK721 Transistor

THE PARAMAGNETIC ROTOR - WILL IT WORK?

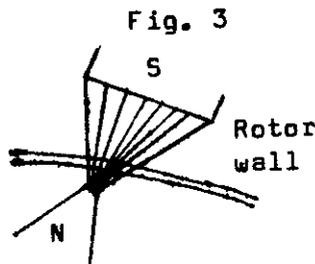
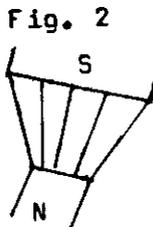
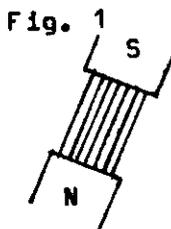
by Nick Herbert, U.S.A.

As I understand it, the PARAMAGNETIC ROTOR (V.1 No.4) works by magnetizing Oxygen molecules near one of the inside magnets, then repelling these molecules away from the magnetizing magnet obliquely into the rotor's wall which picks up some uncompensated transverse momentum as these molecules rebound from its surface.

Let's look at how strong this effect might be:

The first thing to realize is that the molecules will not be accelerated at all in a uniform field Fig.1. Since the force on both the North and South poles of the magnetic molecule will be equal and opposite in an uniform field, the forces cancel and the molecule does not move; although it may rotate like a compass needle.

Only with a non-uniform field (field gradient) Fig.2 can you Barrows accelerate magnetic dipoles? Paramagnetic molecules will move in the direction of weaker field; diamagnetic mols will move in the direction of increasing field strength. A modest design change would put non-uniform fields Fig.3 across the rotor wells:



Another consideration is that the molecule needs time to gain velocity from the magnetic field. If it is constantly being bombarded by other atoms it will never have a chance to build up any velocity before it is struck into a random direction and must start all over again in the direction of the accelerating gradient. The average distance that a molecule travels between collisions is called the MEAN FREE PATH (MFP). The longer the MFP, the more velocity a molecule will be able to pick up from the field gradient.

In other words, the change in velocity due to the magnetic field (as per mathematics) is only about 0.004% of the average thermal velocity.

We can increase the magnetic velocity V_M by lowering the gas pressure which lengthens the MFP. If we drop pressure by a factor of 10^4 , the velocity V_M will increase by a factor of 10^2 . If we do this, V_M will be 0.4% of V_T .

This is still small but not zero; and there are lots of molecules so that it might amount to a large total effect. In any case, once you have demonstrated a small effect, you can usually increase it by engineering methods. For instance:

- 1) increasing the number of magnets (factor of 10)
- 2) use a more susceptible gas - like colloidal iron suspended in a heavy gas (? factor)
- 3) increase the field gradient (factor of 2-5)

So, solely from this simple analysis, it looks as the paramagnetic rotor will produce a (very small) torque on its rotor. Very small, but still some.

COMMENTS ON ABOVE OBSERVATIONS

by Irvin R. Barrows

Your (Nick Herbert) knowledge of paramagnetics is far greater than mine but my comments on your letter would be as follows:

1. I did not intend to magnetise and then repel an oxygen molecule since I thought that all were already magnetised.

2. I did not intend to accelerate any molecule any more than it would be accelerated as it would approach one pole of any magnet and be decelerated

as it left the pole just as a ball coming down is accelerated and then decelerates as it goes up.

3. I was assuming that all molecules have motion and that magnets would alter the direction of the motion. I hoped that some magnet arrangement could be found that could at some place cause the randomness of the molecules to disappear and a two-way directionness found though a one-way would be best if it could be achieved.

4. Time needed to affect change in direction is related to speed of the molecule and by having it at about the temperature of liquid molecule it would be going relatively slow.

5. I do agree that the pressure may have to be reduced because of (MFP) to a point where it would not be strong enough to turn even a drum that was almost friction free.

6. I do notice that you have it at 90K. so you covered my point 4 above.

Possibly rather than having you evaluate any particular concept of mine, I should challenge you to see if you can think of some arrangement of that will:

Take a paramagnetic gas or colloid etc. and by some arrangements cause some areas of the gas or colloid to have something different than pure randomness of direction and then see if there is any way of getting power out of the fact that pure randomness no longer exist in some area of the place.

POWER FOR THE FUTURE

by "Diff", U.S.A.

1000's of experiments had to be performed to gain knowledge, which cannot be found in any book, on harnessing of gravity in Earth which is changing every five minutes. Also Orbital bomb windows in the sky, say 100 or 200 miles up, must have different maps each hour, each day of the year. Believe the Russians may be mapping data on this already. These are but a few lines of gravity. I do hope that every student and scientist in the world gets on the ball of the future. I have accomplished the fading of lines of gravity to almost nil in substance and turn

back into gravity for power or brake as case may require. Pulling power will be uniform and eternal on each of the 360 degrees. This is in Laboratory stage yet.

Although Physics told me that weights on a wheel would never let the wheel make a full turn by itself, no matter how they were placed. But this writer will prove it wrong a couple of years later.

The disc will spin in either direction you want it to on a smooth wire shaft through vibrations made on the wire.

Readers help your children make these, they will love the way they work and may lead to better ideas some day for them.

For H.S. Students

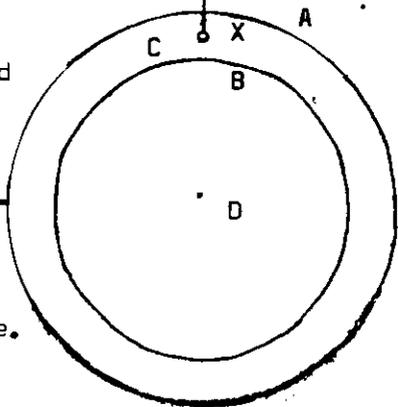
Take a wheel around 20 to 24 inch in diameter. Have it to spin very freely on the axle D, a slight looseness is OK. Be sure stiff grease is washed out of bearings.

This size wheel to weigh approximately 5 to 7 lbs. Use bicycle spoke for rod A-B. Be sure that from A to B is no less than 3 1/2 in. can be up to 4 in. B is the free oiled axle for this; fastened to the wheel itself but free to rotate with weight A say 2 to 3 oz. soldered to end of spoke.

Now at point X something that will hold AB in this upright position until it travels 180 degrees, then releases for good while the wheel makes some 3 1/2 revolutions by itself.

Weight C can be placed on other side of wheel out of the way. It to weigh approximately double of weight A. Can be varied up or down but never more than 3 inches from line A-D.

Let rod A-B rest against point X at top dead centre and take finger off. Results: Your wheel will gain enough of speed on downward stroke to room for better than 3 revolutions; of course AB will hang from B for the 2 extra turns of the free wheelings. Keep bearing B as light as possible.



BOOK REVIEW

EXPERIMENTAL MECHANICS by A. Frederik Collins, F.R.A.S., D. Appleton And Company, New York/London.

Collins have written more than 20 books for 'boys'. We are limiting our observations on Chapter XII on PERPETUAL MOTION MECHANISMS of this book.

Perpetual Motion mechanisms, Collins stated, 'should work without absorbing an equivalent amount of energy from outside source'. But this expression "Gravity Perpetual Motion Machines", indicates utilization of a free source of energy - the gravitational pull (p.8).

Research is in progress on "Gravity shields"(1) and wheels with weights will rotate if a gravity shield is found out. Now, 'wheel with weight' circles due to shifting of the 'weight' as plastic fiber tied to a wheel and to weights on the wheel are heated from solar energy and it contracts causing the 'weight' move thereby changing the 'centre of gravity'. As it turns, the heated fibers cool and expand while cool fibers move into heat and contract (2) inducing circular motion.

Proceeding to the next type of project, Collins refers to another unsuccessful attempt with 'Mercury'. But the success with 'Mercury' dates back to 1760 (p.11). This book thus discourages young ones with veiled information. There is perpetuity in similar efforts.

'Magnetic and Electric Perpetual Motion Machines' have become successful with the latest theory on "Super-conductivity". Resistance of a metal to flow of electricity reduces by extremely low temperatures (2).

The author has used cheap and catchy remarks which appeals to tender mind. Society at large will not gain by discouraging its children about a subject which aims towards utilizing the perpetual sources of energy.

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- 1) Anti-Gravity Research, 8635 Kittyhawk, Box 734, Los Angles, California-90045.
 - 2) Nature Engine, by Dutta D.R., pp.123 & 96a, 1971, 87, Ekdalia Road, Calcutta 700019

NEWS IN BRIEF

Le Coultre Watches, Inc., 580 Fifth Avenue, New York 10036, now makes "Atmos Perpetual Motion Clock", as they call it, on an assembly line basis. They had to carry further the invention of James Cox, a British horologist, in 1760 and a way was found to harness the changes in the temperature of the atmosphere.

Cox's clock required a mercurial barometer containing 150 pounds of mercury to activate it. That barometer has been replaced by a unique metal bellows which contracts and expands as the temperature rises and falls. This action is transmitted to the winding spring through a chain mechanism. A change of only 2 degrees will wind the "Atmos" for 48 hours.

LETTERS TO THE EDITOR

Dear Mr. Dutta,

In the past 70 years fewer and fewer books have appeared on the subject of perpetual motion. Your book therefore comes as a delightful surprise, and particularly so since it is written by an author in Calcutta, who discovered in his initial research that "not a single book on Perpetual Motion was available in India"! With such a handicap, you surely deserve to be applauded for your endeavor. By the way, doesn't it seem curiously apt and appropriate, perhaps even destined, that word on this subject should now come from India, where perpetual motion devices were first recorded in the 12th century (in the Surya Siddhanta and Bhaskara's Siddhanta Siromani)? Word on Perpetual Motion has indeed come "full circle" and, after 800 years, returned to its origins in Calcutta!

The earliest recorded scheme discussed by Henry Dircks is the overbalanced wheel of Villard de Honne-cort, of the year 1237. But modern scholars, in attempting to trace the pre-European evolution and transmission of perpetual motion conceptions from China to India to Arabia to Europe, have disclosed that the book by Bhaskara, Siddhanta Siromani, circa 1150, contains descriptions of several perpetual motion devices, apparently the first written details on

the subject. This fascinating history is contained in the book, 'Science and Civilization in China'.

P. T. Moto

A DISPROOF OF THE SECOND LAW
OF THERMODYNAMICS

by Francis Joseph Fischer, U.S.A.

Part I : INTRODUCTION

The second law of thermodynamics can be stated in many equivalent forms. One statement of the second law of thermodynamics attributed to Lord Kelvin is that "it is impossible by any cyclic process to take heat from a single isothermal heat reservoir and produce no other change except the conversion of the extracted heat into useful work". The purpose of this paper is to disprove the second law of thermodynamics by the demonstration that it is possible by a certain cyclic process to take heat from a single isothermal heat reservoir and to produce no other change except the conversion of the extracted heat into useful work.

Part II : BASIC PRINCIPLES

The process for the conversion of heat into work in a manner contrary to the second law of thermodynamics is described in Part III of this paper and is based upon two essential principles which will now be discussed. (Fig. 1 shows gas A + B in middle comp. ~~112~~)

By figure 1 is represented a thermodynamic system that consists of a container that is divided into three compartments. The system is at constant temperature throughout. Compartment (1) contains real gas A at pressure, P_a . Compartment (3) contains real gas B at pressure, P_b . Compartment (2) contains a mixture of real gas A and real gas B at pressure, P_{ab} . The pressure of gas in each compartment is defined as the pressure that is measured by the use of a manometer attached to each compartment. Gas A and gas B are a pair of real gases with the property, that the molecules of gas A and the

molecules of gas B do not aggregate or combine in any combination with themselves or with each other. The partition between compartment (1) and compartment (2) is a semipermeable membrane which is permeable to gas A but not to gas B. The partition between compartment (2) and compartment (3) is a semipermeable membrane which is permeable to gas B not to gas A.

When the system represented by figure 1 is at equilibrium, it is postulated for latter argument that the equation,

$$P_a + P_b = P_{ab}, \quad (I)$$

is exact regardless of the values P_a and P_b assume.

When the system is at equilibrium, it is also postulated for later argument that the following inequality is true:

$$C_b^2 \neq C_b^3, \quad (II)$$

Where C_b^2 and C_b^3 are the molar concentrations of gas B in compartment (2) and compartment (3), respectively.

The truth of equation (I) and inequality (II) can be demonstrated by recourse to gas dynamic theory. The argument is based upon three fundamental statements about the system of figure 1, when the system is at equilibrium. Firstly, the pressure, P_a , of real gas A in compartment (1) is the net result of no other causes than collisions of single molecules of gas A with the walls of compartment (1). The pressure, P_b , of real gas B in compartment (3) is the net result of no other causes than collisions of single molecules of gas B with the walls of compartment (3). The pressure, P_{ab} , of the mixture of gas A and gas B in compartment (2) is the net effect only of collisions of single molecules of gas A and collisions of single molecules of gas B with the walls of compartment (2). Secondly, the average speed of molecules of gas A in compartment (1) is the same as the average speed of molecules of gas A in compartment (2). The average speed of molecules of gas B in compartment (3) is the same as the average

speed of molecules of gas B in compartment (2). Thirdly, the equilibrium state of the system of figure 1 is in no way dependent upon the mechanisms by which the semipermeable membranes operate.

According to the above statements the equilibrium pressures of gas in compartment (1), compartment (2), and compartment (3) of the system of figure 1 can be described by the equations,

$$(1) \quad p_a = \frac{2}{3} Z_a^1 S_a M_a \quad (III)$$

$$(3) \quad p_b = \frac{2}{3} Z_b^3 S_b M_b \quad (IV)$$

$$(2) \quad p_{ab} = \frac{2}{3} Z_a^2 S_a M_a + \frac{2}{3} Z_b^2 S_b M_b \quad (V)$$

where Z_a^1 and Z_a^2 are the collision rates per unit area of molecules of gas A with the walls of compartment (1) and compartment (2), respectively, where Z_b^2 and Z_b^3 are the collision rates per unit area of molecules of gas B with the walls of compartment (2) and compartment (3), respectively, where S_a and S_b are the average speeds of molecules of gas A and gas B, respectively, in the system, and where M_a and M_b are the masses of single molecules of gas A and gas B, respectively.

It is apparent, that, if the semipermeable membranes of the system of figure 1 operate like mechanical sieves, the system of figure 1 will be at equilibrium only when the following two equations are obeyed:

$$Z_a^1 = Z_a^2 \quad (VI) \quad \text{and} \quad Z_b^2 = Z_b^3 \quad (VII)$$

If the membranes of the system of figure 1 operate by other mechanisms, then, equation (VI) and equation (VII) are still valid. From equations (III), (IV), (V), (VI), and (VII) it can be concluded that

$$p_a + p_b = p_{ab} \quad (I)$$

Each molecule of gas A or gas B in the system of figure 1 is surrounded by fields of force and occupies a finite volume of space. Because the gas molecules in the system of figure 1 can be so described, the equilibrium state of the system of figure 1 is influenced in a manner which can be clearly understood by the

imagining of four vessels, called vessel 1, vessel 2, vessel 3 and vessel 4. Each vessel contains a different kind of gas. However, the amount, the volume, the temperature, and the molecular weight of the gas in each of the four vessels are the same.

Vessel 1 contains a hypothetical gas, the molecules of which occupy zero volume of space, and are not surrounded by fields of force. Vessel 2 contains a hypothetical gas, the molecules of which are hard and occupy a finite volume of space and are not surrounded by fields of force. Vessel 3 contains a hypothetical gas, the molecules of which occupy an insignificant volume of space and are surrounded by fields of force. Vessel 4 contains a real gas, like gas A or gas B, the molecules of which occupy a finite volume of space and are surrounded by fields of force.

The pressure of gas in each of the four vessels is directly proportional to the rate, Z , at which the gas molecules in each vessel collide with the walls of the vessel. The collision rate, Z , of gas molecules in each vessel with the walls of the vessel is inversely proportional to the average time interval between successive collisions of a single gas molecule in each vessel with the walls of the vessel. The collision rate, Z , in vessel 2 is greater than the collision rate, Z , in vessel 1 because a single gas molecule collides with the vessel walls, more often in vessel 2 than in vessel 1, because the space available for the motion of a single gas molecule is less in vessel 2 than in vessel 1 due to the space occupied by the other molecules in vessel 2. Therefore, the gas pressure in vessel 2 is greater than the gas pressure in vessel 1. The collision rate, Z , in vessel 3 is greater than the collision rate Z , in vessel 1 because in vessel 3, unlike in vessel 1, the average time interval between successive collisions of a single gas molecule with the walls of the vessel is prolonged by delays caused by collisions of the single gas molecule with other gas molecules between successive collisions with the walls of the vessel. The time delay that results from the collision of a gas molecule with another gas molecule is caused by the fields of force that surround the gas molecules¹. Accordingly,

1) E.S. Swinbourne, J.Chem.Ed., 32, 366-369 (1955).

the gas pressure in vessel 3 is less than the gas pressure in vessel 1. By similar reasoning, the collision rate, Z , in vessel 4 is less than or greater than the collision rate, Z , in vessel 1 depending upon the relative effects of the volume and fields of force of the gas molecules in vessel 4 upon the average time interval between successive collisions of a single gas molecule in vessel 4 with the walls of vessel 4. Therefore the gas pressure in vessel 4 very probably will not be equal to the gas pressure in vessel 1.

(Continued in next issue)

MECHANICAL/ELECTRONIC DEMON (Continued from p.9)

In 1913 the Polish physicist, M. Smoluchowski delivered a lecture at Goettingen on "The limits of the validity of the second law". He first recalled Ehrenberg, that in the 19th century physicists believed the atomistic kinetic theory was discredited because of its incompatibility with Clausius second law. By this time the speculative tendency in Physics was again in vogue, largely because of the success of the electron physics and the analysis of such fluctuation phenomena as the Brownian motion. As a result the second law had lost its role as dogma. Smoluchowski's point, Ehrenberg continued, can be better appreciated by translating it into modern terms. Although Smoluchowski refers to recent progress in electronics, ideas such as the rectification of an alternating voltage had barely arisen in his time. Today the principle of the rectification plays a major role in such solid-state electronic devices as diodes and transistors. These devices are analogous to the hypothetical gadgets that translate the up-and-down movement of Brownian particles into a purely upward motion, or that perform the old demon's trick of permitting only fast molecules to go from A to B.

Once we start, Ehrenberg stated, solving our problem by denying the possibility of offending devices, we have to go on denying, and sequences of ad hoc solution are never satisfactory in science.