A HUNDRED POSTERS

#30 June 78

editor / Alan Davies
publisher / Rebecca Muller

editorial address / 33 St. Mark's Place, New York City, 10003

May 30, 1977

Dear Alan Davies -

I guess you received my ms. dealing with line spectra. Briefly, I observe that atomic weight and number cannot account for the order in the lines. I suggest that valence may have something to do with it, noting that noble gases are inactive and that, unlike the others, they seem to have lines in common (as example I give Helium and neon). In Lux embourg recently, I pursued the matter further. At the National Library I consulted a massive German tome, Kayser's work on line spectra in around nine volumes (these volumes consisting of numbers only, in Angstrom units) wherein I found that (my notes were stolen in Germany, so I cannot recall with certainty) Krypton and Xenon have lines in common

You may publish this

Best Regards,

Britton Wilkie

Line Spectra & the Periodic Table

A gypsy cart in the snow...
The travelling show of mythical monsters hidden behind decorative screens of swastika signs, of alchemic figures paralyzed in their understanding at the doorways of dream, has come to a halt. Unable to sell shares in hell or pawn grief's jewels, our mercurial operator puzzles coldly at his own shell game – essays to discard the shells, which appear as colored lines – and concern himself with the matter they cover, which seems as balls of music fast-expanding, as a dense pea irritating to the princess, as an unborn gravedigger's shroud and as an everlasting cloud in a flash of light most loud...

So–

Our gypsy mountebank has taken it upon himself to juggle with very small balls (so deftly does he bounce them about, that they change magically in number and color). So very small are they that I cannot see them. The gong that announces the performance ...

... is a tiny spark. With the light comes the image of concentric spheres of vibration about a center. When one of the outer spheres collapses to the innmost, invisible rays proceed. When the collapse is to the secondmost, visible rays proceed ... And so forth unto rays ever redder, waves ever longer. This orb of phantom vibration evaporates to reveal Mendeleyev's mineral cabinet on which vials of gas, bits of metal, curious rocks — in short, the elements — have been arrayed in little pigeonholes according to their weight — so that hydrogen lifts gently under the upper left-hand corner, while uranium weighs heavily in the bottom right-hand corner.

We can examine the array as columns up and down as well as rows left to right. The 8th column, the noble gasses, do not combine chemically. Seeking understanding, we may follow threads connecting each pigeonhole with an imaginary balloon floating above it. Here our memory of concentric spheres of vibration changes form somewhat, rather as an orange turning suddenly blue, as the gypsy tosses it from one hand to the other.

Here we imagine the shells in terms of their tendency to combine chemically. The nobles bear a distinct outer number indicating stability, the other elements with greater or lesser outer numbers must react and inter-act. Elemental difference is visualized as a matter of increasing number. If Lady Helium were to increase her jewel center by eight, her negative mirror would reflect an inner shell of two, and an outer of eight, rather as if over one ring she had slipped another, more bejewelled, to become Neon in a marriage ceremony. The lovers marvel at both the concordance and difference of their symbols. Hydrogen's electron has several spheres of vibration — in the phantom balloon hovering over the cabinet of minerals, beside which we find the spectroscope — in appearance like a small telescope — which gratifies our enquiring eyes in a way which the diagrams in textbooks cannot.

The prisms refract the incoming light according to its inner color (length of wave we are accustomed to say) so that all the red will be bent one way, all the blue another, with yellow and green

betwixt them. When the vapor of hydrogen becomes incandescent, the prisms give us the colors of the vibrant spheres (the emitted wavelengths of the atom) ...
We have the visible indication of something within light — how mysterious to see the lines of hydrogen!
It is interesting that elemental spectra proceed from the incandescent vapors only, and that the solids give a continuous spectrum. Here our gypsy revels in colors gay. Along the etherial frontiers of elements his hands on fire play. From the labelled shelves of the periodic table one hand brings each ordered point to light, while the other collects the light in a prism ...
Or he plays along so, as if striking each element with an optical tuning fork, we see that the emanations of the vapors do not suggest ever-increasing numbers of potentially radiant vibrant shells or particles (whereby we might expect the spectra to be additive, so that each would begin with the vibration of hydrogen, adding the vibration of succeeding shells), but an entirely random and arbitrary arrangement, such that Sodium, 11, gives only one

yellow line. The phantom balls in the juggler's hands pass through the rainbow and seem to vanish substantially, so that the audience gazes bewildered at the empty hands and the conjurer's smile.

The carnival crowd gathered about the platform show decorated with colored drapes and fanciful painted shapes of bird-headed men and dog-faced apes is in no way satisfied. The yokels have their wits about them. Most clamor about, shouting that the transfer of the wee ball from one colored shell to another sheds no light for them on how light is shed. It seems but another drapery, painted with geometric fancies, veiling the candle. These are the ones who, when sea-shells labelled "proton", "neutron", "electron" and so forth were handed out at the gate, scoffed at the symbolic play and doubted the value of the symbols. These are others, who have followed the play most closely, who simply demand: "Very well, if the number of electrons does not determine the order of spectral lines, what does?"

Our juggler, anticipating a shower

of rotten eggs & over-ripe tomatoes, dashes off-stage, finding his two baboon assistants at play among heaps of texts. One baboon has opened a "Handbook of Elementary Physics" (N. Koshkin and M. Shirkevich – Foreign Languages Publishing House, Moscow) to a plate of spectra. In contrast to the elements of positive & negative valence, two of the noble gasses, Helium & Neon, appear with lines in common – or almost so. Neon seems much like Helium with fifteen additional very fine red lines and a yellow line to the right of her two thick red lines (perhaps like an overtone) and eight very fine green lines right of her thick yellow line, her lines in the blue and violet having disappeared. The other baboon has turned sky-blue and holds a hastily scrawled note to the effect that of the very fast x-rays, the spectral line arrangements are the same for every element. We recede now to the remote spheres leaving the juggler to face the chaos of the elements...

As from Heavenly light earthly creation proceeds, so also does the chick in the nest remember only the shell, which seems the very written word thereof. And so the wordsome beasts do trade amongst themselves with

shells for shells, knowing nothing else, in faith that there will be light therein.

Mr. Wang, our Chinese astronomer, wondered at the multitude of resonant containers to which men give utterance. The children were playing in the garden 'mid the grotesque rocks and tame trees. Like a fountain they seemed next to the lily-padded pool. Cities, empires, cities, nations, races, courts, countries, the myriad of containing word forms at once solidified from their speech — so that what one moment seemed a babbling brook, the next moment seemed a heavy book, or an array of bowls and vases in a shaded nook. Seeing on his maps the men of the world all contained within frontiers, Mr. Wang grew more pointed, "Wherein", he asked, "do these containers have their existence?"

Ancient milky magic of mother sea. Listening into the shell we hear the ocean whisper a Gaelic poem of an heroine who appears in emerald green bearing a blue-eyed limpet shell, the "Cup of Mary", containing the milk of wisdom, which she gave to all who sought it. The curious may even find this milk in prehistoric graves, where shells decorate the departed, placed there by those thoughtful of the soul shell or soul husk. Idolatry provides

us the vision of congealed "god bodies";
shells of hypostatic life-substance...
We recall the Ammonites worshipping
ammonites – the spiral fire of Moloch...
So various ways can this darkness
be bent, such that it was as cowrie
necklaces sent on shell amulets to
protect the pilgrim as on his quest
he went.

We bring to the very smallest
thing cognate spheres that will
enable us to locate. Something is
concealed as the common boundary in
the abstract, one line giving rise to an
infinity of distinctions, is revealed.

B. Wilkie
Blairstown, New Jersey
March, 1977

Other Publications
P. O. 415
Kenmore Station
Boston, MA. 02215

A. Dames
33 St. Marks Pl.
NYC 10003